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The Pharmaceutical Council met on February 2. Mr. Mackay raised a discussion on the subject of the examinations for prizes, which had been settled at the previous meeting. It was then decided that the questions were to be set and the answers estimated by the London examiners only, one or two of the Scotch

examiners to watch proceedings at Edinburgh in the capacity of potheemen, Mr. Mackay remarked. He, therefore, proposed that one English and one Scotch examiner should be appointed to undertake the examination. Mr. Schacht had not understood that, as now appeared, these prize examinations were to be held in London and Edinburgh only. As they were to be written examinations he saw no reason why they should not be held at all the local centres. Several gentlemen supported this view, and there seemed an inclination to reconsider the arrangements; but this tendency was opposed by Messrs. Hampson and Betty, on the ground that they had been resolved on, and should be fairly tested. Mr. Cracknell objected to examinations spread through the country, giving as a reason that letters sometimes miscarried—an occurrence rare enough, we should suppose, to render it unworthy as an argument. Mr. Williams was more to the point in showing that this was no change, as the prize examinations had always been held in London, the novelty being that the competition was now open to all who had passed the examinations, whereas formerly it was only for those who passed in honours. Mr. Mackay's proposal, which had not been opposed by anybody, was then put and negatived, the councillors probably thinking they were voting against Mr. Schacht's suggestion. —An oil painting of the late Mr. Daniel Hanbury was presented to the society by his brother, Mr. Thomas Hanbury. The President proposed the formation of a committee, to consist of the council, examiners, and professors, with power to add to their number, to raise a memorial to Daniel Hanbury. This was carried.—Mr. Williams brought forward a motion to alter the fees for Minor and Major examinations from three guineas and five guineas respectively, as they now stand, to five and three guineas respectively. He also proposed to make a rejected candidate sacrifice two guineas instead of one guinea, as at present. Mr. Williams maintained that the present scale of fees barely paid expenses, and he showed conclusively that a rejected candidate paying only 21s. was a positive loss to the society, the average cost of each candidate having been, in 1875, thirty-eight shillings, exclusive of official and other expenses. Mr. Robbins seconded the motion, but Mr. Frazer opposed it vigorously. He urged that if the society required more money it should be obtained from the members, not from the student class. The former might be charged 25s. per annum, but the latter were, he thought, sufficiently taxed already. He suggested that unsuccessful candidates should have no money returned to them, but should be allowed two more opportunities of passing free of charge. Messrs. Savage, Hampson, and Mackay expressed themselves somewhat to a similar effect, and ultimately Mr. Williams withdrew his motion for an alteration in the scale, but the council agreed to the proposal to charge a rejected candidate two guineas additional, instead of one, on his second attempt. —A memorial was submitted from Exeter suggesting that chloral hydrate should be placed on the schedule of poisons. This was left for consideration.—Applications from Manchester for 25l., and from Leicester for 15l., for educational and library purposes, were granted.

The Members of Council whose present term of office expires this year are the following:—Seven who retire by lot—Messrs. Atherton, Bottle, Cracknell, Frazer, Greenish, Mackay, and Savage; seven who remained in by lot last year, and who now retire by rotation—Messrs. Hills, Owen, Sandford, Schacht, Shaw, Sutton, Williams. The following remain in office for another year:—Messrs. Baynes, Betty, Brown, Hampson, Hanbury, Rimmington, Robbins.

A most important interpretation of the Apothecaries' Act in reference to counter-prescribing was given by Mr. Baron Bramwell in a recent case tried before him. He asserts that according to the letter of the law a chemist is liable to a penalty of

20*l.* if he merely gives a customer a draught for headache. This decision seems to have surprised the medical profession almost as much as the chemists and druggists themselves.

The bye-laws of the Irish Pharmaceutical Society have been approved, and the first examination will be held on March 1. It is said that a lady will probably present herself among the first group of candidates.

The Board of Inland Revenue has made a sudden swoop on a maker of corn solvent at Manchester, and has recovered from him penalties amounting to 32*l.* 10*s.* for the sale of some packets of corn solvent. According to Mr. Harvey, who writes to us this month, the Board has decided to require a medicine stamp to be affixed to the popular tubes of toothache, corn, and chilblain composition so largely sold at sixpence. Chemists with these in stock had better affix the stamp and sell the pencils at 7½*d.* each.

At the Liverpool County Court last month the Pharmaceutical Society sued a person named Edward Mickle for selling poisons, and for using the title of chemist, claiming 5*l.* penalty for each offence. The defendant demanded a jury, and pleaded that he had been on the register, but that the Council had removed his name with no reason except that a Manchester doctor, who had signed his certificate, had removed his name therefrom. The judge pointed out that defendant had other remedies against the Council if they had removed his name from the register without sufficient cause, but that the register as it stood was evidence to the County Court. The jury gave a verdict for the plaintiffs, but thought the case a hard one, and hoped the Council would reduce the penalties. The judge said he could see no hardship in the matter.

The Pharmaceutical Society also appeared at the Windsor County Court, on the 20th ult., against someone named Haward, and sued for two penalties of 5*l.* each, one for dispensing a prescription containing hydrocyanic acid and opium, and the other for using the word "chemist" over his door. The defendant did not appear, but a lawyer's clerk was sent to admit the claim and pay the money into court. The counsel for the Pharmaceutical Society applied for costs and the expenses of two witnesses from London, which were allowed.

Mr. Lamplough, of London, has secured an injunction from the Master of the Rolls against Mr. T. G. Gibbons, chemist, of Manchester, who has been using the word "pyretic" in its scientific sense, not knowing that it had been previously appropriated.

A curious case was tried at the Croydon Petty Sessions lately. A gentleman named Hobbs summoned Mr. Gill, of Croydon, for detaining from him two medical prescriptions. Plaintiff had had two prescriptions from Dr. Fleury and had taken them to Mr. Gill to be prepared, and he retained possession of them. Mr. Hobbs several times demanded the prescriptions. On one occasion, Mr. Gill said it was not his practice to give up prescriptions, and, on another, he said they were destroyed. The defendant, on being sworn, stated that he destroyed the prescriptions on the day that they were given in. He also stated that he was dispenser to Dr. Fleury, who would not allow him to give up his prescriptions. The Bench dismissed the case, as the complainant was unable to prove that the prescriptions were in existence when he applied for them.

The first appeal to Somerset House under the new Sale of Food and Drugs Act has resulted in favour of the tradesman.

Dr. Muter was the analyst, and the *casus belli* was a sample of butter purchased at the price of 1*s.* per pound in Southwark. Dr. Muter estimated the sample to contain 30 per cent. of butter fat and 70 per cent. of foreign fats. The defendant asked that the sample held by the inspector should be referred to Somerset House. This was done, and the official report indicated that the butter was pure, or at least that the analytical evidence was quite compatible with purity. The magistrate, Mr. Partridge, said he was bound to give the defendant the benefit of the doubt: at the same time he thought it fair to the scientific witnesses for the prosecution to give them an opportunity of making statements. Dr. Muter then brought forward Messrs. Wigner and Dupré, who supported his analysis, although the conclusions of these three chemists were very various. For example, Dr. Muter had estimated 30 per cent. of real butter in the sample, Mr. Wigner thought there might be 20 per cent., and Mr. Dupré was confident there was none. We learn that up to the present only three disputed samples have been submitted to the Somerset House laboratory, and that in the other two cases the decision has been in favour of the analysts.

It appears that a higher tribunal than Somerset House Laboratory has established itself for the final decision of disputed analytical cases. This *soi-disant* authority is the vestry of St. George-the-Martyr, Southwark, which resolved, after the recent butter case in which Dr. Muter's certificate was contradicted by Professor Bell, of the Inland Revenue Laboratory, but supported by Messrs. Dupré & Wigner, that the certificate "was sustained by evidently preponderating evidence." Is there anything under the sun, or over it, that a churchwarden will not undertake to decide?

A very interesting case in reference to a chemical patent has recently been decided at Glasgow. Messrs. Medlock & Bailey, of Wolverhampton, as is well known, own a patent in respect to the preservation of meat, game, &c., by a solution of bisulphide of lime. Their product had been used for some time by Messrs. J. & D. Robertson, of Glasgow, who after a time ceased to buy of them, and procured the substance from the Glasgow Apothecaries' Company. They, as defendants in the case, maintained that the patent was not valid, for the following reasons:—1. That the invention set forth in the specification was not in conformity with the provisional specification; 2. That the conditions of the letters patent had not been complied with, in respect that the patentees had not detailed in the specification the nature of the invention and the manner in which it is to be performed; 3. That the invention for which the letters-patent are issued was not novel. After elaborate arguments on both sides, the sheriff decided in favour of the prosecutors on all points, and granted costs.

The defendant in the case of *Hickisson v. Ashton* (the marking ink case reported in our last) moved in the Court of Common Pleas on January 14 for a new trial, on the ground that the verdict was against the weight of evidence. The judges (Lord Coleridge and Justices Grove and Denman), after consulting with Baron Cleasby, refused the application.

A batch of summonses was taken out lately at Guildhall by the inspectors of the City against milk-sellers, who it was alleged depreciated the fluid largely with water. In the very initial stage of the prosecution all the cases broke down, as the advocate of the defendants elicited that the inspectors had not complied with section 14, which enacts that the suspected article must be divided into three parts and sealed up in the presence of the defendant, who is to retain one portion.

The assistant to Mr. Farrer, a chemist at Brighton, named John Allen, has been sentenced to two months' imprisonment with hard labour for violently striking his master's wife.

An inquest was held in London a few days ago on a child whose death was said to have been accelerated by five doses of Atkinson's Infants' Preservative.

While Mr. Bright was in Birmingham last month, a deputation of tradesmen, representing the Midland Counties Grocers' Association, waited upon him with the object of obtaining some expression of opinion in reference to Civil Service Trading. The Tribune of the People evidently did not understand the grievance, and we must do him the justice to add that the deputation did very little to enlighten him. The difficulty, he was told, was the use of the title of "Civil Service" by these companies. Mr. Bright very properly replied that he thought that a matter of but small importance; that it was not likely to have much greater effect than the establishment of a Royal Arms over a shop. Being told it was a question of principle that was involved, the orator immediately wandered off into a lecture on co-operation generally. May we be allowed to explain to Mr. Bright that all that is asked of Government is that they shall require their servants to devote their full time and best energies to their office duties. Tradesmen will themselves deal with all the developments of fair competition.

A long article appears in the last issue of the *Pharmaceutical Journal* on the Benevolent Fund, in which the non-subscribing members of the trade, outside the society, are severely reproached for not contributing to this charity. The writer quotes one or two ungenerous remarks which some chemists have made in reference to the fund, and argues as if these represented the views of chemists and druggists generally. This is grossly unfair. The real cause of the indifference is the absence of definite information as to the demands on the fund. Probable subscribers see that there is a sum of 14,000*l.* hoarded in consols, and men do not care to subscribe to a charity unless there is a real want of money. Will the managers of the fund tell us whether the present income is insufficient to meet the just claims of distress in our ranks?

At the Chemical Society's meeting on January 20, Dr. Armstrong exhibited a specimen of pure crystallised glycerine from Messrs. Dunn & Co., of Stratford, a portion of a bulk of 40 lbs. The crystallisation had been induced by exposure to the cold of the early part of January, combined with the agitation of a journey by rail. Dr. Odling, remarking on the rarity of this product, recalled the fact that another specimen had been shown there some years previously by Dr. Gladstone. It had been produced under similar circumstances. Mr. J. Williams said he had found hydrocyanic acid to be a very delicate test for the purity of glycerine. If the glycerine were perfectly pure, the mixture might be kept for a twelvemonth without change, whilst a slight trace of impurity in the glycerine caused the mixture to assume a yellow tinge in a short time.

Dr. Frankland will give a lecture before the Chemical Society on Thursday evening, the 17th inst., "On some points in the Analysis of Potable Waters."

The chemists' ball at Willis's Rooms on January 19 was, as usual, highly successful. Nearly 300 ladies and gentlemen were present, and all the arrangements were excellent. Mr. Hills was chairman at the supper table, and proposed the usual solitary toast, "Success to the Chemists' Ball," in a short speech. Various provincial associations have also held dinners, suppers, and social *r unions* during the past month.

JOHANNES RUDOLPHUS GLAUBERUS.

By JOSEPH INCE.

DR. ROBERT GODFREY was a physician who entertained a high notion of his own abilities, a sentiment which was strengthened by a profound contempt for those of his contemporaries. In 1674 he wrote a little book filled with virulent invective, called "Various Injuries and Abuses in Chymical and Galenical Physick, committed both by Physicians and Apothecaries, detected." In the preface he sets forth that his discourse saw not the press through the importunity of friends, nor was its appearance influenced by any of the usual inducements which lure the inexperienced into print; but that it resulted from a wish to speak his mind and to administer some sharp reproof. His most dear father, he states apologetically, was killed *secundum artem* through the deceit of the physician and apothecary, by taking a "preventive purge;" and the author himself also in his younger years had had his vitals much weakened by poisonous and debilitating methods. In the twentieth year of his age, Robert Godfrey became intimately acquainted with a true-hearted chemical physician; he *tabled* in the doctor's house, and gained so much knowledge of medicine as to prevent himself from being snatched away by an untimely death as was his honoured parent. Such an independent spirit was not likely to commit his literary production to the patronage of a great man: he resolved to let it stand or fall on its own intrinsic merits, adding a not very courteous intimation to the reader, "that if thou likest it so, thou mayest buy it; if otherwise, let it alone."

To wade through the treatise would be neither profitable nor interesting, but the reader must be cautioned not to refuse a certain measure of allowance to this class of composition, which is a type of a good deal of seventeenth century diatribes. The age not unfrequently mistook rudeness for a sign of strength, and it was coarse when it meant only to be decisive. The first onslaught is directed against mercurial and antimonial remedies; another is a condemnation of the unrestrained use of bleeding; and a third relates to Glauber. Some extracts from the last-mentioned notice may prove acceptable to pharmacists of the present day.

"When I view Glauber's works," says the doctor, "and examine the forepart of them, I must needs conclude he wrote not a few things that were very good and useful, though methods tedious enough in preparation were delivered."

Various conflicting opinions respecting this chemist have been entertained. His name will be handed down to remote posterity in inseparable connection with the sodium sulphate salt, which was the Natron Vitriolatum, P. L., 1787; but was officially honoured as the Sal Catharticus Glauberi, P. L., 1745. That title is yet recognised in continental pharmacy, and is still familiar in English domestic nomenclature.

Oliver Cromwell, in his impetuous manner, inscribed with his own hand in an old volume of "Glauber's Alchemy," "Id sayde Glauber is an arrant knave. I doo bethinke me he speaketh of wonders whiche cannott bee accomplished: neverthesse itt ys lawfull for man too the endeavoeur."

The truth is, Glauber was not satisfied with honest physick, but he loved also visionary speculations. When a pharmacist leaves the beaten track of pharmacy and wanders amongst philosophic furnaces his friends have reason to feel anxious. Glauber's reputation was not enhanced when he set about making aurum potable, and separating gold from flints. Godfrey, the moment his hero turned alchemist, was uncertain which of the appellations, knave, fool, or madman, would best characterise his conduct. To smoothe the difficulty an anonymous Latin treatise was published in Holland in 1660, which held up Johannes Rudolphus to unmingled scorn. It declared how the pretended *savant* raised money on false pretences, how he

sold receipts for gaining wealth while he was as poor as the oxchequer of a bubble bank, how he cloaked his deceit in whining religious phrases, and was altogether unsatisfactory. Glauber, according to the same authority, had hit upon an ingenious device. He would get from the printer a certain number of copies of his own book; these he would bind curiously, and stamp on them his name, "incompassed with a laurel and the marks of the seven planets, to set them off." These he would despatch, some to a plenipotentiary, others to a great man, and thus seek to gain a questionable advantage. One such tract was forwarded to a too credulous magnate, who paid the sum of one hundred ducats for the manuscript, which afterwards shone forth in print. The same confiding individual paid, in advance, six hundred imperials for a secret which was so well kept that its mystery was never solved; while another lost four hundred imperials by a repetition of the swindle. England, Germany, and Holland were prepared to give Glauber a warm reception, and the bed which the philosopher had made to lie upon became uncomfortable.

One saith, "Alas for me, who have spent so much money on Glauber, and have not received, indeed, one pin's worth of profit or gainful retribution from his arts." A second: "But all things in great quantity being bought for the process in labouring, and all things being effected according as I was commanded, I received nothing again from thence, but an utter loss of my expenses." A third: "Behold what incredible naughtiness is in Glauber; he cannot perform the concentration of which he boasted." This dupe had constructed marvellous cauldrons, which had produced beer of such exhilarating composition that the most poor and indigent would not taste it.

Lastly, it is asserted that "a quick-witted and confident unlearned junior chymist ventured on Glauber's Mineral Work, and experienced condign dissatisfaction." Indignation at this point could be repressed no longer, and the anonymous writer vents his full scorn in the elaborate anagram, *Vah longus verbo sed nil supra*, which our students who have passed the College of Preceptors will easily decipher. Glauber's delinquencies and rhetorical statements are criticised in full detail in many successive paragraphs, but further we need not follow either Dr. Robert Godfrey or the ingenious Latinist. Glauber's printed formulae and fantastical directions are common to the literature of the art of making gold and the discovery of the philosopher's stone. Much virtuous denunciation is here heaped and wasted on those mystical and ornate instructions, which are not special to Glauber, but formed the stock-in-trade of the whole of this set of experimenters. It would be reprehensible in the extreme, and dishonest, not to turn for a moment to the other side of the picture. The late Dr. Paris has written the following sentence in his "Pharmacologia":—

"The works of Glauber contain accounts of many discoveries that have been claimed by the chemists of our own day; he recommends the use of muriatic acid in sea-scurvy, and describes an apparatus for its preparation exactly similar to that which has been extolled as the invention of Woolf; he also notices the production of pyro-acetic acid, under the title of vinegar of wood, so that the fact of the identity of this acid and vinegar, so lately announced by Vauquelin as a new discovery, was evidently known to Glauber nearly two centuries ago."

THE SALE OF FOOD AND DRUGS ACT, 1875.—The under-mentioned appointments are at present vacant: Public analyst for Lancashire, 300*l.* per annum, 6*s.* for each certificate, and reasonable travelling expenses when required to give evidence; public analyst for Glamorganshire, 2*l.* 12*s.* 6*d.* for each statutory report, 15*s.* for each analysis and certificate, and 10*s.* 6*d.* for attending as a witness at the place where he resides, or 21*s.*, with 3*d.* per mile, going and returning elsewhere.

CALIFORNIAN BORAX.

IN last month's "Trade Notes" we gave a brief account of a wonderful deposit of borax discovered in California by Mr. Arthur Robottom, of Birmingham, England. We have since received from Mr. Robottom himself a more detailed report of the discovery, which we are confident will interest our readers as much as it has interested ourselves. Mr. Robottom writes:—

"In your last issue you refer to the borax lake in the Slate Range Mountains, Southern California, and you appear to doubt the existence of native borax in that district. I believe I am the only Englishman who has made it a study to examine the wonderful deposits in this remarkable locality, and for your information I give a few facts that may surprise you.

"I may first tell you that I have been connected with the tincal trade of Thibet for over 25 years, and a very large amount of this product has come under my control. I am also familiar with the Tuscanian boracic acid, and was the first to introduce borate of lime from Chili and Peru.

"You are no doubt aware that Mr. Edward Wood made a contract with Count Lardarel for all his supply of boracic acid. As soon as this contract was signed he reduced the price of borax so low that tincal did not pay to import, and only very small lots arrived in this country. He then sent out orders to Calcutta to buy up all the tincal in that market, and put his price of borax up to 160*l.* per ton, and realised a net profit of about 115*l.* per ton, and sold from 30 to 45 tons of refined borax per week. At that time I set to work and revived the tincal trade, received large shipments, and had large lots sent on consignment. This trade has been carried on ever since.

"Some 16 years ago tincal was found at the bottom of Cleer Lake in Northern California. I got a person to go and report upon it, and he found the supply would be limited. Parties in Nevada, at Fish Lake and Teels Marsh, began making borax from the borate of soda that exists in those districts. Borax at this time (7 years ago) was selling in San Francisco at 28 cents. per lb., and every one in Nevada that had any land with only a small deposit of crude borate of soda upon it began making borax, thinking that this price would continue. I had correspondents in Nevada, and was kept well advised of what was doing.

"About three years ago Mr. Wood made another attempt to put up the price of borax to 75*l.* per ton. I then decided to go to the West Indies, Mexico, Nevada, California, Chili, Peru, &c. My object in going to Nevada was to examine the borate of soda deposits. After doing this I went on to San Francisco, and my name appeared in the papers as a borax expert. Many people hardly knew what borax was. I gave and received all the information possible. In San Francisco I was waited upon by a Mr. Riddell, a gentleman connected with one of the banks, and a Mr. Dodge. Both these gentlemen held land in the Slate Range, and they asked me to go down and see if borax existed there as in Nevada. I dressed up as a poor miner and got down to Los Angeles, mixed up with miners, teamsters, scallywags, banditti, and others, and led a rough life. My expedition involved considerable trouble, and I had to walk many miles, and live with the friends referred to above, sleeping frequently on the sand, under waggons, in stables, &c., for small shanties only exist about every 12 miles, and there are no other houses, for the country produces nothing but sage-brush for miles. No grass, no trees, a perfect wild, howling wilderness, and in some parts no water for miles. This refers to the road that runs from Los Angeles to Cerro Gordo. You have to strike off this road a distance of 42 miles, and you get to the borax lake. On my first visit there was no house or shanty all the way; now there is one small place, where they keep corn for the mules, named after me, called Robottom's Springs.

"At the lake I met two men, an old Californian miner and a

bear hunter, with whom I stopped some time. I found borax to my heart's content. Before going down I had made arrangements to have some of the land transferred to me, and a deed was drawn up to this effect in San Francisco. After taking a good survey of the place I thought I should be worth at least a million or more, for I at once saw that borax could at some future period be got from this lake and put on board a sailing vessel, either in the port of Wilmington, Los Angeles, or at San Francisco, cheaper than from any other known deposit. The crude borate of soda on the surface in some places is 3 feet thick. Then at other parts there is a foot of blue mud just under the crude borate of soda, filled with very peculiar crystals; then below this there is a solid mass of pure borax combined with sulphate of soda. This is the most extraordinary deposit in the whole world, for there are lumps of pure borax from 1 to 4 lbs. each. (I brought a lot home with me.) The sulphate of soda, with the borax, was put into warm water, which dissolved the former, and the pure borax remained. I had about a ton of this deposit sent up to San Francisco and on to England, and I have since had a good many shipments.

"The most curious thing in the lake is a reef of carbonate of soda, and near to the reef there are a lot of pyramids of the same product, about 4 feet high and 1 to 2 feet thick. In the centre of the lake there is a ridge of common salt. Between the common salt and the borate of soda there are a few hundred acres of shallow water, very warm, filled with crystals, pink, rather green, and light brown. The water has the appearance of a peacock's tail in some places, and in others it has a pink appearance. I brought some of the water home, and it has, this last week, been handed over to G. Gore, F.R.S. Boilers and vats have been erected on the land. The crude borate of soda is first put into cow-hide baskets, then put in a dump cart, taken to the boilers and boiled for a certain time. The solution is then run into vats, it crystallises and makes the best borax I ever saw. This, on the market, is called 'concentrated' borax. In that district it never rains: the climate is fearfully hot; the last time I was there it was never under 106°, and sometimes up to 115°, in the shade. Therefore, when the crystal borax is exposed to the sun it becomes almost anhydrous, and much stronger than English refined borax.

"After collecting a lot of specimens, I returned to San Francisco, abandoned the idea of going to Chili, got the deeds for land all in order, and made my way to New York. On getting to England I made several ineffectual attempts to induce makers to work this discovery. At length a company was formed, called 'The Slate Range Borax Company, Limited.' I got Riddell, in San Francisco, to commence borax making in real good earnest, and the bulk of his borax has come from this lake, and now upwards of 120 tons per month are being turned out at this district alone. This is principally from the crude borate of soda after being once crystallised. It is no use working at the native borax or the under surface till the borate of soda is cleared away.

"Now, as regards the supply of borax, I can plainly see that the deposit at Slate Range is tremendous, and when it can be sent to San Francisco or Los Angeles by rail the price must and will come much lower. The next important thing is to find a market for it, for a more useful product is not known. For the last three months I have been trying to find out new uses for it, and the result is marvellous. The next difficulty is to get the shopkeepers to sell it. The chemists and druggists say we give too much for money, and the grocers say it is an article sold by druggists and not by grocers. If we give a small quantity and allow the druggist to sell dear the demand is limited. At present we sell a dozen penny packets for 8d."

We read in the San Francisco *Commercial Herald* that the Riddell Company made 600 tons of borax last year (1875), and intend to increase their product during 1876 to 1,000 tons. Their price last year in San Francisco was 6½ cents per lb., but they decline to renew contracts at that rate or even to take orders at 6½ c. The total production of borax in Nevada and California reached last year 2,000 tons, and as the Southern Pacific Railway is extended the price of the product will probably decline.

A sample of Slate Range borax which arrived recently in Liverpool has been analysed, with the following result:—

Crystallised bi-borate of soda	..	..	..	..	99.75
Chloride of sodium	..	..	..	..	.25

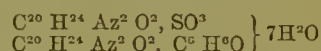
Scientific Notes from Foreign Sources.

NEW REACTION OF IODATES.

M. COME* finds that if some drops of water in which phosphorus has been standing be added to a solution of an iodate with starch paste, an intense blue colouration is developed. The reaction does not seem to be affected by the presence of acids, bases or salts, and is due to phosphorous acid, which, however, is without action on bromates and chlorates. Phosphorated water is available for the detection of iodides if these be previously treated with hypochlorite of sodium and boiled. In this way one drop of a ten per cent. solution of iodide of potassium in a litre of water gives a marked colouration.

CARBOLISED SULPHATE OF QUININE.

S. COTTON, of Lyons, has discovered a means by which carbolic acid and sulphate of quinine can be combined. He says that when to a saturated solution of sulphate of quinine which gives no crystallisation on cooling an equal quantity of an alcoholic solution of carbolic acid is added crystals appear, which rapidly increase in quantity. This phenomenon is not at all due, as might at first be supposed, to the insolubility of the sulphate of quinine in an alcoholic solution of carbolic acid, but rather to the formation of a new body, which the discoverer calls *Sulfate de Quinine Phénaté*, in contradistinction to the official *Sulfophénaté de Quinine*, obtained by the combination of sulpho-carbolic acid with quinine. M. Cotton then points out the advantages of his preparation over the official compound, and particularly lays stress on the fact that in the former there is no odour of carbolic acid: he also asserts that in his product carbolic acid loses its caustic properties. The following is given as the chemical formula of the new salt:—



The ready solubility of this salt in water is an important advantage in connection with M. Cotton's discovery.

ERGOTININE.†

WENZELL obtained two alkaloids from ergot of rye, ergotine, and ecboline. Not having been separated in a state of purity their properties have been little studied, but Wenzell considered ecboline to be the active principle. M. Tauret, who employs a method quite different from that of Wenzell, has succeeded in obtaining a small quantity of an alkaloid which he terms ergotinine, to distinguish it from the indefinite mixtures known as ergotine. Ergotinine is separated as follows. Coarsely powdered ergot of rye is exhausted by twice treating with boiling alcohol of 86 degrees, in such a way as to get two pounds of filtrate from one of ergot. The alcohol is recovered over the water-bath, and the residue allowed to cool, when it is found to consist of three distinct portions—a stratum of oil on the surface, some liquid extractive, and a deposit of resin. The oil is removed to a flask and corked up, the liquid is rapidly filtered, and the resinous deposit washed with ether. The fat and the liquid extractive, treated separately, yield the alkaloid. The first is dissolved in ether, which has already been used for washing the resin, and the alkaloid withdrawn from the filtered solution by agitating with successive portions of diluted sulphuric acid. The aqueous solution of the sulphate of the alkaloid, filtered and washed with ether to remove the last traces of fat, is then treated with excess of potash and agitated with chloroform. The chloroform solution of ergotinino yields that body on evaporation *in vacuo*. The liquid extractive is distilled over an oil-bath in a current of hydrogen, till every trace of alcohol is judged to have passed over. The receiver is then changed, slight excess of carbonate of potassium is added, and the distillation is continued. The water which passes over holds in solution methylamine and another very odorous body. When concentration has proceeded so far that bumping is imminent, hot water is added and the operation continued. The syrupy residue is acidulated, washed with ether, slight excess of potash added, and finally agitated with chloroform which dissolves the alkaloid, and

* *Journ. de Pharm. et de Chimie*, Dec., 1875, p. 425.

† *Journ. de Pharm.*, January 5, 1876, p. 25.

furnishes it on evaporation as before. Ergotinine has a strong alkaline reaction and saturates acids. It precipitates with the usual alkaloidal reagents. It is soluble in alcohol, chloroform, and ether, and rapidly alters on exposure to the air. The most striking reaction of ergotinine is the colour it assumes with moderately concentrated sulphuric acid. This is first reddish yellow, and then an intense violet blue. The power of producing this reaction is lost after a few minutes' exposure to the air. Solutions of the salts of ergotinine become rapidly rose-colour, then red, under the influence of the air. If the liquid extractive be distilled with strong potash or soda, no alkaloid is obtained, but only methylamine, doubtless produced by decomposition of the former. The want of stability of ergotinine may explain the rapid deterioration of powdered ergot.

SALICYLIC ACID AS INDICATOR IN ALKALIMETRY.*

The objection to the use of litmus solution in titration consists in the fact, that although the blue tint may have been obtained, yet it rapidly changes to red. H. Weiske recommends as a reagent, free from this objection, a solution of salicylic acid in water, to which a few drops of ferric chloride solution have been added. To this deeply-coloured solution dilute soda solution is added to neutrality, which is known by the solution assuming a reddish yellow tint. This solution being then added to the acid, to be titrated by means of soda solution, becomes more and more coloured as the point of neutrality is reached; when, however, the solution becomes alkaline, the colour suddenly disappears.

THE ACTION OF LIGHT AND AIR ON CHLORAL-CHLOROFORM.†

DR. C. SCHACHT has shown previously that pure chloroform, when exposed to air and light, undergoes regular and unceasing decomposition, whilst *in vacuo* it suffers no change either from sunlight or diffused daylight. The experiments were made on ordinary chloroform prepared from bleaching powder and alcohol; when extended subsequently to chloroform prepared from chloral, this was found to behave in a similar manner. Bietz, who has given very precise directions for the testing of chloroform, and has also studied the action of small quantities of alcohol on the stability of chloroform, has investigated the effect of alcohol contained in it on the specific gravity, and further has determined the specific gravity of pure chloroform at different temperatures. He says that the increase in specific gravity which is generally referred to increasingly large proportions of foreign compounds resulting from decomposition, is due to the gradual removal of alcohol. Last year chloral-chloroform was recommended as absolutely pure by Schering, who condemns ordinary chloroform because it contains a larger proportion of chlorinated ethers, which result from the first and last runnings in the distillation of alcohol being employed in the manufacture. Since these chlorinated oxidised bodies cannot be completely removed from chloroform by fractional distillation, and as they have the property of gradually decomposing with formation of phosgene gas, according to Schering the presence of the latter in ordinary chloroform is clearly explained. To remove the acetole by heating with sulphuric acid is inexpedient, as by this treatment chloroform is rendered prone to form hydrochloric acid. On the other hand, in the preparation of chloral-chloroform the acetole, which is formed by the action of chlorine on alcohol, is completely decomposed by distillation of the crude product from sulphuric acid, and the chloral purified in this way yields absolutely pure chloroform by distillation with soda-lye or milk of lime. This chloral-chloroform evaporates completely, without leaving oily drops of a penetrating odour. If it be assumed that in quite pure chloroform, phosgene gas may be formed by the influence of light and air, the presence of this in chloroform ought to be noticed oftener than hitherto. Schacht does not recommend, however, that this chloral-chloroform should be admitted into use, there being no known reagent which will distinguish between it and the ordinary article; he recommends pharmacists to purchase only the best that is offered, and whenever it is required for inhalation to redistil on the water-bath. Recently he has repeated his experiments on chloral hydrate from another source than that previously em-

ployed. The chloroform obtained from this was allowed to stand in a stoppered white glass bottle wrapped in white paper. After eleven days it smelled strongly of phosgene gas, and gave a decided reaction with nitrate of silver. According to Schering's statement, as this chloroform (after purification by standing on sodium and subsequent distillation) contained no acetole, there should have been no formation of phosgene gas. In another experiment a bottle partly filled with absolutely pure chloroform was placed in the sunlight; in a very short time it had undergone decomposition, and an unmistakable smell of phosgene gas was noticed. Schacht concludes that pure chloral chloroform is a body exceedingly sensitive to the action of light,* and contains the elements of decomposition a short time after it is prepared, even if alcohol be added to it.

DETECTION OF HYDROCYANIC ACID.†

MR. CAREY LEA says:—A grain or two each of a pure ferrous salt (ammonio-ferrous sulphate answers) and uranic nitrate are dissolved in half an ounce of water. Two or three drops of the mixed solution are placed on a clean white porcelain capsule, and a drop or two of the liquid to be tested is made to slip slowly down. If a cyanide be present, a purple precipitate (in very dilute solutions, greyish purple) is produced. Cobaltous nitrate may be substituted for the uranium salt, and will give an almost equally delicate reaction.

The delicacy of the Prussian blue test may also be very much heightened by appropriate precautions; the best method is as follows:—A weak solution of iron is to be made containing a ferrous salt, to which a little ammonio-ferric citrate is to be added. Of this solution acidified with hydrochloric acid, two or three drops only are to be placed in a white porcelain capsule. A drop of the liquid to be tested is then allowed to slip down the side of the capsule, and this, meeting the iron solution, will produce a blue cloudiness. Either of the above tests will indicate the presence of $\frac{1}{5000}$ of a grain of anhydrous prussic acid.

The ammonio-citrate of iron should also have the preference over the sulphate in testing the purity of potassium ferricyanide.

ESTIMATION OF CARBONIC ACID IN CARBONATES.

M. J. VOLHARD ‡ recommends that the carbonate be heated with potassium bichromate and the evolved gas in Liebig's potash apparatus. A piece of combustion tubing shorter than that required for an ultimate organic analysis is closed and drawn out to a point at one end, and then bent twice at right angles. The attenuated part of the tube is filled with fragments of potassium bichromate; smaller pieces are then introduced, but should not be allowed to fall into the drawn-out part. After this, 2½ c.c. of fine bichromate, a mixture of the carbonate and bichromate in fine powder, and 2½ c.c. of bichromate in powder are successively added. A passage for the gas is easily obtained by tapping the tube, which is to be connected with a chloride of calcium apparatus by means of a perforated cork tightly fitting into the open end; the potash bulbs are then attached to the CaCl₂ apparatus. The tube is heated in a combustion furnace, commencing at the closed end, so as to chase out the air. The mixture of bichromate and the carbonate is now gradually heated, and, when bubbles cease to pass, a current of oxygen is again obtained by re-heating the contents of the drawn-out part of the tube. The operation, which gives excellent results, lasts half an hour, and does not demand particular attention.

TESTING OF CINCHONA ALKALOIDS FOR STRYCHNIA AND MORPHIA.

THE above-named poisonous alkaloids have been found more than once within a few years mixed with salts of the cinchona alkaloids. Though the admixture has occasioned several fatalities, the question as to how it has come about has not hitherto

* This conclusion is not in agreement with the results first obtained and not subsequently questioned, viz., that "pure chloroform *in vacuo* suffers no change, either from sunlight or diffused daylight." These results point to air as the one thing necessary to induce decomposition.

† *Am. J. of Sci.* [3], ix., 121-3, from *Journ. Chem. Soc.*, January 1876, p. 112.

‡ *Journ. de Pharm. et de Chimie*, Dec. 1875, from *Neues Rep. für Pharm.* 1875, p. 531.

* *J. f. Chem.* [2], xii., 157-8, from *Journ. Chem. Soc.*, January 1876, p. 113.
† *Archiv. des Pharmacie*, December, 1875, p. 543.

been answered. The pharmacist should be constantly alive to the danger of a recurrence, and should carefully test every small parcel of quinine obtained from the wholesale druggist. Large parcels in the original package of the manufacturers are not contemplated here as subject to such dangerous admixture.

In testing quinine it is almost universally the plan in Germany to dissolve a decigramme in strong sulphuric acid, in order to determine the presence or absence of salicine and other bitter substances. In order, with this solution, to detect the presence of strychnia or morphia, 0.3 gramme of quinine must be taken, and dissolved in about 6 c.c. of pure concentrated sulphuric acid, with gentle agitation. Of the colourless or slightly yellow solution, 1 c.c. is poured upon some fragments of potassium bichromate. Pure quinine solution remains colourless around the crystals for quite a minute; subsequent colour is only due to solution of the bichromate. In presence of strychnia a blue colour is immediately developed about the crystals; this passes into violet, red, and, lastly, green, forming streaks when the solution is gently moved.

To the remaining sulphuric acid solution of quinine four or five drops of solution of silver nitrate are added, and the whole gently shaken. If morphia be present, a reddish yellow colouration immediately appears; on gently warming this it passes into a deep turbid red brown, owing to reduction of the silver. It is true that bodies other than morphia give this reaction, but the appearance of it indicates the questionable character of the quinine under examination, which should be further tested for the contaminating body. With quinine hydrochloride a white precipitate is, of course, formed. In this case, even the colouration is distinct. The tests are applicable to salts of the other alkaloids obtained from *cinchona* bark.

CHLORAL SUPPOSITORIES.*

The production of a chloral suppository containing a sufficient proportion of this drug to cause sleep has heretofore been deemed impossible. Mr. H. Mayet has, however, devised the following formula, by which he manages to get forty-five grains of chloral in each suppository:—

R. Ol. Theobromæ, gr. xxv.
Cetacei.
Pulv. Chloral, āā gr. xlv.

For one suppository.

These suppositories are of good consistence, and may easily be put into use.

GLASS CEMENT.†

A CEMENT to stop cracks in glass vessels, to resist moisture and heat, is made by dissolving caseino in a cold saturated solution of borax. With this solution paste strips of hog's or bullock's bladder, softened in water, on the cracks of glass, and dry at a gentle heat. If the vessel is to be heated, coat the bladder on the outside, just before it has become quite dry, with a paste of a rather concentrated solution of soda and quicklime or plaster of Paris.

JABORANDI.

In *Archiv. des Pharmacie*, January, 1876, p. 43, H. E. Schelenz writes as follows:—"After I sent in July the article printed in the November number, the jaborandi mania (so to speak) seemed to have subsided in a measure—certainly a sign of the at least doubtful value of the drug. At the present time I have only to add that the name jaborandi, as that of a drug, is entitled to celebrate in Germany its centennial jubilee, although it denoted some other than our modern jaborandi. A. Conradus Erstingius wrote in 1770, in his '*Nucleus totius medicinæ*,' on jaborandi or yaborandi: 'Brazilian so-called mandrake, of which the Arabic name is yaborn.' That Ersting did not absolutely mean our jaborandi, is shown by his saying: 'The plant grows in Spain, Crete, France, and Gallilee, and the root has a fancied resemblance to the human form. Of this Meses is said to have written in Genesis xxx. 14-16.'"

FILTRATION.

M. FLEITMANN* says that when a filter is closely applied closely to the sides of a funnel, it filters less quickly than the same filter doubled, and the latter allows the liquid to pass less freely than a triple filter. This fact is easily explained if it be considered that in the case of a simple filter, the liquid which has traversed the inner layer of paper is forced to pass over the surface of the outer layers before it can drain away. The thicker the external layers the more easy is the passage of the liquid, and the more rapid the filtration. The thickness of the layers may be augmented by using a double or triple filter, especially if the outer papers be coarse. For folded filters the question is quite different; a single filter will naturally allow the liquid to pass more rapidly than a double one.

CANTHARIDIN.

GALIPPE† gives the preference to acetic ether over chloroform for the extraction of cantharidin. The operation is best conducted in a displacement apparatus. If two parts by weight of acetic ether be used with one part by weight of powdered cantharides, it is so well exhausted from the first that the last drainings possess scarcely any green colour. The yield is greater if the process be carried on in a room, the temperature of which is above the ordinary, say 35° C. The ether is recovered from the united percolates by distillation, whereby a green fatty matter, loaded with crystals of cantharidin, is left behind. This is spread upon filtering paper, which absorbs the fat. The crystals are washed with carbon bisulphide, and after decolorisation with animal charcoal, finally crystallised, from acetic ether.

OLEUM JECORIS ASELLI FERRATUM.

Of the many formulas which have been submitted for this preparation, O. Wachsmuth‡ gives the preference to that of Bembeck. He simplifies the operation, however, by omitting the tedious process of collecting and pressing the precipitate of ferrous oleate, and proceeds as follows:—One part of a hot 10 per cent. solution of pure ferrous sulphate is poured, with constant stirring, into a hot 5 per cent. solution of dried oil-soap. There is immediately formed a greenish-grey resinous mass of iron-soap, which collects on the sides of the vessel and on the stirrer, whilst the soluble products of the decomposition, with the excess of ferrous sulphate, remain in the almost clear liquid. The latter is poured away, the soft iron-soap thoroughly kneaded and washed under hot distilled water, and dried on the water bath in the same vessel in which it was precipitated. The yield is about 85 per cent. of the soap used. By gradual addition to the requisite quantity of cod-liver oil, gently warm, this iron compound easily dissolves, forming a clear deep brown oil, which it is not necessary to filter. The whole operation may be performed under two hours.

The iron-soap is at first greenish grey, but very soon oxidises in the air and becomes brown, owing to the formation of a ferric salt. The taste resembles that of soap. It is soluble in volatile and fatty oils, in ether, chloroform, &c.; insoluble in water, alcohol, glycerine, &c.; and leaves 12 per cent. of ferric oxide on incineration. Diluted hydrochloric acid, when gently heated, removes ferrous and ferric oxides from it, a clear oil floating on the solution. Iron-soap prepared from tallow soap is harder, and has the same colour; the solution in cod-liver oil is a thick fluid. An examination by Wachsmuth of various samples of advertised cod-liver oil with iron, showed a proportion of iron far below what should have been present.

AN ALLEGED NEW ELEMENT.

In a note presented to the Academy of Sciences of Paris, M. Lecocq de Boisbaudran asserts the discovery by him of a new elementary body in the products of the chemical examination of a blende from the mine of Pierrefitte. For the new body he proposes the name *Gallium*. He has not yet succeeded in separating it perfectly from zinc, which it closely resembles in its deportment with reagents. The salts are easily precipitated in the cold by carbonate of barium. The sulphide is probably white, is precipitated in presence of free acetic acid, and is insoluble in sulphhydrate of ammonium. The spectrum is composed chiefly of a narrow violet ray.

* *Amer. Drugg. Circ.*, Dec. 1875, p. 202.

† *Amer. Drugg. Circ.*, December, 1875, p. 211.

* *Journ. de Pharm. et de Chimie*, February, 1876, p. 121.

† *Pharm. Cent. Anzeiger*, December 11, 1875, p. 199.

‡ *Archiv. de Pharm.*, January, 1876, p. 44.

PERCHLORIDE OF IRON.

(By Mr. WM. INGLIS CLARK.)*

THE subject of perchloride of iron is one of great interest both to the practical pharmacist and the theoretical chemist, and it is one about which much has been said and written. I cannot add much to the admirable researches which have preceded my own (as, for instance, those of Professor Attfield), but I purpose embodying the various facts which have accumulated in as short a paper as possible, and placing along with these the results of my own investigations.

First, with regard to the general chemical history of perchloride of iron. Iron combines with oxygen in several proportions, forming oxides, and of those which are basic we have two, called respectively ferrous and ferric oxide, in which the metal plays the part of a dyad and a triad. These readily combine with acids, forming ferrous and ferric salts.

We have two chlorides, corresponding to the two above mentioned oxides. These are ferrous, or protochloride (FeCl_2), and ferric, or perchloride (Fe_2Cl_6), and owing to a general property of the salts of iron we can readily change the one into the other. This property is their instability, or the readiness with which they can be changed into a higher or lower state of oxidation. Thus, ferrous may be converted into ferric salts by a process of oxidation (as it is called), and on the other hand, by suitable reducing agents, we can produce a ferrous from a ferric salt. It may be said that ferric chloride is always obtained by the oxidation of the ferrous chloride, except when ferric oxide or some suitable salt is dissolved in hydrochloric acid.

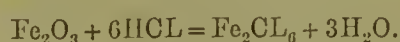
An apparent contradiction to this statement will be found in the first method for the preparation of this substance, which I now bring before you.

If a piece of watch spring be heated and plunged into chlorine, or if chlorine be passed into a vessel containing heated iron, a slight glow is noticed, union takes place, and scales of a greenish-brown colour are deposited on the sides of the vessel. These consist of pure ferric chloride, and, indeed, this process has been recommended as a desirable method for obtaining the substance by Professor Attfield. I may remark that this method seems to be unsurpassed when a preparation for analytical use is wanted, its neutrality and purity rendering it specially suitable for morphia testing. It is, however, not suited for general adoption in pharmacy, and it is, therefore, unnecessary for me to say more on the subject.

At first it is natural to suppose that here we have the production of ferric without the preliminary stage of ferrous chloride; but this is very doubtful, as we shall see. If there be excess of chlorine, the ferric salt is the result; but if the supply be deficient, or present only in the proportion to form ferrous chloride, then the latter is produced. It is probable, therefore, that at first a film of ferrous salt is always formed, which may or may not be changed into ferric by further contact with chlorine.

It is usually in solution, however, that perchloride of iron is used in the laboratory, and we will now glance briefly at the various ways of obtaining it as such.

The first is the one which was adopted, previous to (the) 1864 (British), in all the three Pharmacopœias. In this an excess of ferric oxide or ferri rubigo, as it is called, was macerated with hydrochloric acid, at a gentle heat, in order to ensure complete saturation, if possible, and by this means a solution of perchloride of iron of considerable purity was obtained, the action proceeding according to the equation—



This method possesses considerable advantages, such as the simplicity of the operation, and the avoidance of any oxidising agent, necessarily foreign to the substance in question, which advantages, however, are to some extent neutralised by the presence of free hydrochloric acid, owing to the insolubility of the ferric oxide of commerce. This insolubility, I believe, is owing to the fact that certain of the salts and the oxides of iron are readily soluble in dilute acids when freshly precipitated, but after a few days the molecular condition changes, rendering them insoluble. This is noticed in the solution of

the phosphates of iron or lime in dilute phosphoric acid, or similarly in dissolving magnesian carbonate in excess of carbonic acid.

Second Process.—This consists in passing chlorine gas into a solution of ferrous chloride till no more is absorbed. The pale green liquid becomes brown, then darker in tint, and finally forms a deep orange-red solution of ferric chloride. This, however, has the disadvantage of containing excess of chlorine, and in order to remove this ebullition must be resorted to; and when a solution of the chloride is boiled decomposition sets in, hydrochloric acid is given off, neutrality or even basicity being the result, and a large quantity of ferric oxide is either thrown down or dissolved in the liquid, the ferric chloride itself being even volatilised in small quantity along with the steam and hydrochloric acid. It is also rather an expensive process, but the absence of nitric acid and free hydrochloric acid recommends it when the presence of chlorine is no objection.

Third: the Official Process.—This consists in dissolving a given weight of iron wire in dilute hydrochloric acid, oxidising by means of nitro-muriatic acid, and evaporating in a water bath till a solution is obtained of sp. gr. 1.440.

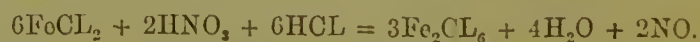
The chemical changes which take place are, first, the formation of protochloride; and, second, the production of perchloride.

The iron of commerce contains more or less carbon in two different conditions—as carbide of iron (FeC), and as graphitoid carbon, and we might therefore expect to have the latter at least left behind upon solution of the iron. If some varieties of white cast iron be used, and the acid be strong, no residue is left, both the conditions of carbon becoming converted into volatile hydrocarbons; but with ordinary iron wire it is found that the carbon present as carbide is entirely volatilised as the hydrocarbons previously referred to, and forms an oily layer on the surface of the liquid, having a composition similar to that of petroleum, and a very disagreeable odour. The graphitoid carbon, on the other hand, is left in hard scales. This is best seen when a block of iron is taken (as in specimen). The hard black substance we notice does not consist entirely of carbon, but also contains silicon and a certain amount of ferric oxide. It is partially soluble in potash, and when exposed to the air becomes heated, according to some being even raised to ignition, ferric oxide being left behind. It is also magnetic, as we might expect. When iron of any kind is dissolved in hydrochloric acid of considerable strength the action does not go on so rapidly as if it were more dilute, because the protochloride which is first formed, being insoluble to any great extent in concentrated hydrochloric acid, forms a crystalline film over the iron, thus preventing contact of metal and acid. To obviate this a certain amount of water is added, which keeps the salt in solution, thus allowing the action to go on, and we get a liquor of 'blackish colour,' owing to the particles of carbon separated from the iron being diffused through it in a fine state of division.

Having filtered the solution thus obtained, we get it green and bright, or if it has been left exposed to the air for some time after the disengagement of hydrogen has ceased, a brownish colour is noticed, or a large quantity of brown sediment is left in the filter. This deposit consists of a hydrated ferric oxychloride, the composition of which is variable, and it should not be thrown away, for the addition of the acid necessary to convert the ferrous into ferric salt will be found to dissolve it up again to the clear bright solution, and as far as I have noticed its presence does not interfere with the subsequent process.

Second Stage.—In this our object is to alter the iron from the dyad to the triad condition, and this may be done in several ways, as we shall shortly see, but at present we will confine ourselves to the official process.

This consists in the addition of half as much more acid to the solution as was originally used in its preparation, and the subsequent oxidation by means of nitric acid. This depends on the fact that nitric acid readily oxidises, becoming itself reduced to the condition of a lower oxide, so that when it is placed in contact with ferrous chloride, in presence of sufficient hydrochloric acid, it is quickly reduced to the state of nitric oxide, the nascent oxygen uniting with the hydrogen of the hydrochloric acid to form water, and the chlorine and ferrous chloride forming ferric chloride—



The nitric acid liberated immediately dissolves in the unchanged ferrous salt, forming a brownish-black compound with

* Read before the Pharmaceutical Society at Edinburgh, on Jan. 28.

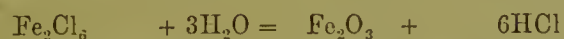
it, having the formula $4\text{FeCl}_2, 2\text{NO}$, but the liquid having been rapidly heated, and gradually becoming converted into ferric chloride, loses the power of dissolving the nitric oxide, so that as the last traces of ferrous salt disappear the gas is given off with violent effervescence, and, meeting with the oxygen of the air, produces "nitrous fumes," consisting of nitrous acid and nitrogen peroxide (NO_2).

In the Pharmacopœia a considerable excess of nitric acid is ordered, that the liquor may be oxidised without excessive evaporation, and this is generally found to be the case. This excess may be most easily appreciated by looking at the theoretical amount necessary, which is 12 ounces, the Pharmacopœia requiring 18 ounces, while I find 15 sufficient.

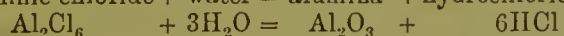
The above is one of the most serious objections urged against this process, since the presence of free nitric acid, and consequently ferric nitrate, must be objectionable.

The solution as above obtained is of an orange-red colour, and is then subjected to evaporation at a temperature below 212° Fahr. Although this point be not approached very closely, evaporation cannot be carried on very far, as the chloride is readily decomposed when it approaches the crystallising point, in a manner similar to the chlorides of aluminium and magnesium, and forming ferric oxide and hydrochloric acid.

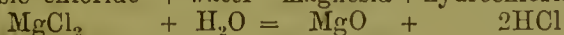
Thus



so also aluminic chloride + water = alumina + hydrochloric acid



magnesian chloride + water = magnesia + hydrochloric acid



The following modifications of this process are worthy of our notice.

It has been proposed to dissolve the iron in the whole of the hydrochloric acid necessary for the preparation of the perchloride, thus ensuring the speedy solution of the metal, but I have never experienced any difficulty with the ordinary way, and the larger amount of liquid to work with and filter, as well as its highly acid character, render this proposal objectionable.

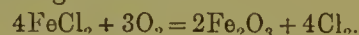
The next modification is one which differs from the official process only in a few particulars, and is the one which I have found most satisfactory in practice. It is briefly as follows:—Saturate a definite quantity of aqueous hydrochloric acid with iron, and having filtered the solution, add five-eighths as much more acid as was used at first, along with one-eighth part of nitric acid. Thus, if we started with 128 ounces of hydrochloric acid, in order to oxidise it 80 ounces more, as well as 16 ounces of nitric acid are added, there being thus an excess of hydrochloric acid over the B. P. quantity amounting to 16 ounces. The liquor, being allowed to stand for several hours, is partially oxidised, the compound of ferrous chloride and nitric oxide ($4\text{FeCl}_2, 2\text{NO}$) forming thick masses at the bottom of the vessel. A portion of the solution is then heated till the oxide is evolved, and as the remainder is added in successive portions to the hot liquid the gas is given off at once and ferric chloride left. The chief advantages of this process are (1) the avoidance of ferric oxide in the resulting liquor, the excess of hydrochloric acid preventing this; (2) that, owing to the smaller quantity of nitric acid added—viz., 16 as compared with 18 ounces—and the fact that the nitric acid is not heated along with the ferric chloride for any length of time, there is less chance of having any ferric nitrate present in the liquor.

In Mr. Proctor's valuable work on "Practical Pharmacy" a recommendation is made to the effect that if the solution of protochloride be added in small quantities to the nitric acid, instead of the reverse, it is oxidised at once, violently and completely. In practice he adds the nitric acid to one-eighth of the proto-solution, brings the whole to ebullition, which is at a much lower temperature than 212° F., and then adds the remainder of the protochloride gradually, boiling the liquid between each addition. This may also be done at first without heating, completing the oxidation by heat; but the nitric oxide, remaining in solution, gradually accumulates till a point is reached when the whole is disengaged at once and with great violence, some of the nitric acid being volatilised before it is reduced to nitric oxide. If Mr. Proctor's directions, furnished to me personally, be strictly followed, I find that 17 ounces of nitric acid are necessary, as compared with 16 ounces by the last process.

Another method, by which we dispense with nitric acid oxidation altogether, was proposed by Mr. Rother in the *Pharma-*

ceutical Journal, and this was the use of potassic chlorate as an oxidising agent. The simplicity of the process, namely, in adding the required amount of the salt to the protochloride solution mixed with the extra quantity of the acid, is greatly in its favour, but the presence of a considerable quantity of potassic chloride in the resulting liquor renders it unfit for preparing tincture, as we shall see hereafter. The changes involved depend on the fact that when potassic chlorate is acted on by hydrochloric acid it is decomposed, forming potassic chloride and euchlorine, a mixture of chlorine and peroxide of chlorine according to Professor Crum-Brown, or chlorine and hydrochloric acid according to Miller. This is a powerful oxidiser, and rapidly changes the ferrous into ferric salt. If excess of potassic chlorate be added, and free hydrochloric acid be present, some euchlorine remains free, and may be recognised by its peculiar odour.

In order to avoid the evaporation of the ferric chloride solution, and consequent production of ferric oxide, some have proposed to use concentrated solutions of the ferrous salt for oxidation, but this is open to the objections that (as we before mentioned) iron is only soluble with difficulty in concentrated hydrochloric acid, and that, if a solution of ferrous chloride is evaporated, some of the salt is volatilised along with the steam, while another portion is decomposed, chlorine escaping, and ferric oxide remaining behind—

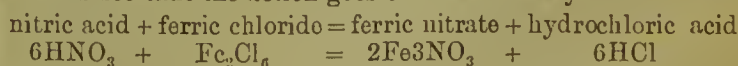


Having thus briefly touched on these various processes, we will notice some points necessary to the full appreciation of them.

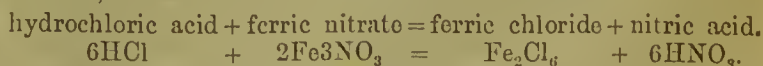
It is a common error to imagine that the hydrochloric acid in the official process is saturated with iron, and, as a result, that, in a case where excess of the metal has been used in order to ensure rapid saturation, it is only necessary to add half as much more acid for the preparation of the ferric salt. This is quite true if a theoretical quantity is what we look to; but, in order to ensure a satisfactory result, an excess of hydrochloric acid is necessary. This is advantageous in several ways. 1st. It assists in decomposing the compound ($4\text{FeCl}_2, 2\text{NO}$) previously referred to, this body being comparatively stable in slightly acid solutions, but readily split up if the solution be strongly acid. 2nd. It decomposes any ferric nitrate which may result from the action of the nitric acid on ferric chloride, a fact to which I will again allude. 3rd. The amount of hydrochloric acid used seems to exercise a marked influence on the yield of liquor. In support of this statement, I place before you the following results, extracted from my laboratory note-book:—

	1	2	3	4
Muriatic acid	192 oz.	192 oz.	192 oz.	208 oz.
Nitric "	18 "	18 "	15 "	16 "
Iron	2 lb.	excess	excess	excess
Yield	14½ "	13 "	13 "	16 "

Several things will strike the observer of these statements. *First.* That in Nos. 1 and 2, which contain the official quantity, there is a considerable excess of nitric acid. This was introduced in order that the liquid might be oxidised without being evaporated to a high specific gravity. Such had been the case with the British Pharmacopœia (1864) preparation, in which only six drachms of nitric acid were used, where nine are now ordered, and which had therefore to be evaporated to half the proper bulk before complete oxidation took place. The compound of ferrous chloride and nitric oxide, if no excess of any acid be present, is not decomposed in a dilute solution, hence the necessity for excessive evaporation to which we have referred. If excess of nitric acid be added, the action takes place much more readily, but ferric nitrate is produced at the same time by the decomposition of the chloride with nitric acid. We thus see that the action goes on in either way—



and also,



Second Observation.—The proportion of hydrochloric acid in relation to the weight of the iron and the yield differs very much. This variation may possibly be explained as follows:—If a saturated solution of iron, as in Nos. 2, 3, and 4, be mixed with the exact theoretical amount of hydrochloric acid necessary for oxidation, as in Nos. 2 and 3, on heating, not only does the

ferric chloride itself suffer decomposition, losing hydrochloric acid, and becoming more and more basic in its composition, but it seems more ready to volatilise along with the steam, and be lost when the retaining acid is absent. This seems to be indicated by No. 4, where the addition of 16 ounces more acid to the solution before evaporation produced an increase of $1\frac{1}{2}$ lb. in the yield. The fact that No. 1 gave a larger yield than No. 2, while the latter contained a larger amount of iron, also seems to favour this view.

When a strong solution of perchloride of iron is diluted with water, a considerable contraction takes place, and much latent heat is given out. I have determined roughly the amount of this contraction and the rise in temperature, and have tabulated the results here. The first column indicates the number of volumes of liq. ferri perchloridi, with the specific gravity in each case. This being mixed with five volumes of water, gave the measure indicated in column 4, with the indicated specific gravity. In the sixth column is the specific gravity which might have been expected had no contraction taken place, and in the last one is the rise in temperature which was noticed. These results must be regarded merely as approximations to the truth.

Fe ₂ Cl ₆ Sp. gr.	Water	Volume	Exp. sp. gr.	Calculated sp. gr.	Rise in temperature
					Degs. Fahr.
95 vols., 1763	5	97	1687	1725	30
95 " 1687	5	98	1670	1652	16
95 " 1644	5	98.3	1586	1561	16
95 " 1586	5	98.8	1575	1550	11
95 " 1535	5	99.48	1516	1508	7
95 " 1485	5	99.49	1468	1460	6
25 " 1763	80	—	—	—	56
100 " 1440	50	147	1315	1293	—
100 " 1440	58.3	152	1297	1274	—
100 " 1440	66.6	165	1272	1264	—
100 " 1440	100	199.1	1225	1220	—
100 " 1440	150	249.1	1180	1163	—
100 " 1440	200	299.1	1150	1147	—

Solution of ferric chloride is also rather interesting as regards its crystallisation. If we evaporate a solution down gently, replacing any hydrochloric acid which may be lost in the operation, when it attains a degree of concentration corresponding to about sp. gr. 1500, if left standing for several hours, it begins to crystallise in pale yellow nodular masses, which consist of a hydrate containing 40 per cent. of water, and having the formula $\text{Fe}_2\text{Cl}_6\cdot 6\text{H}_2\text{O}$. According to some experimenters another hydrate, containing 25 per cent. of water, crystallises from such a solution in rhombic plates, but I myself have only succeeded in getting the first-mentioned one. There is still a third hydrate, with the formula $2\text{Fe}_2\text{Cl}_6\cdot 5\text{H}_2\text{O}$, which crystallises in reddish yellow crystals, from a solution of sp. gr. 1600. When exposed to moist air, this deliquesces, forming a liquid of sp. gr. 1545, by evaporation of which a solution of sp. gr. 1763 may be obtained. This is a supersaturated solution, and although it may remain apparently perfectly stable at ordinary temperatures, I have repeatedly found the dropping in of a crystal, or exposure to dust, or even simple agitation, to determine its crystallisation in a few seconds. Similar phenomena may be noticed with saturated solutions of acetate, hyposulphite, or sulphate of soda, and, as with these, much latent heat is given out at the moment of solidification.

Let us now turn shortly to the tincture or alcoholic solution of this salt, prepared by mixing the liquor with rectified alcohol. This preparation is very prone to decomposition, which arises from four chief causes—heat and light, presence of protochloride, deficiency of hydrochloric acid, and excess of nitric acid. The effect of heat and light is merely to facilitate the decomposition which is liable to occur owing to the presence of one of the latter conditions, except under exceptional circumstances. Thus, if the tincture be heated in a sealed tube, it is decomposed very rapidly in a way we shall afterwards refer to, while if a portion be exposed to light the ferric chloride and alcohol react on each other in a similar manner, but as the other conditions are usually present we will confine ourselves to the ordinary decomposition. This, as far as I can judge, may be divided into two kinds: 1st. The production of insoluble oxychlorides in the liquid, accompanied by a darkening of the colour, and the formation of ethereal compounds. 2nd. That in which no precipitate is thrown down, the colour becoming greener, while much protochloride and ethereal compounds are produced.

With regard to the first, a solution of ferric chloride has the property of dissolving a very large quantity of freshly precipi-

ated ferric oxide or hydrate, even as much as ten molecules for every one of the chloride, forming liq. ferri chloroxydi, which, although of variable composition, we may represent by the formula $\text{Fe}_2\text{Cl}_6\cdot 10\text{Fe}_2\text{O}_3$, and, indeed, the late Dr. Graham, Master of the Mint, obtained by dialysis a solution containing 98.5 per cent. of oxide to 1.5 per cent. of hydrochloric acid. This liq. ferri chloroxydi is also to some extent formed when the ordinary solution of perchloride is boiled, for then the ferric oxide set free by the chloride dissolves immediately in the undecomposed chloride, forming a solution of a dark red colour. If a tincture be made from such a liquor, a precipitate will either at once fall, or, after standing for a few days, it will be deposited as a flocculent mass. This consists of the oxychlorides previously referred to, and which are insoluble in the menstruum. At the same time the colour darkens greatly, and more or less of an ethereal odour is developed.

By some it is thought that this is caused by the presence of free nitric acid, by others that it is owing to deficiency of hydrochloric acid. It certainly almost always accompanies the latter condition, but it may happen without any nitric acid at all being present.

As prepared by the British Pharmacopœia (1864) way, a very dark tincture is the result, and this owing to the fact that the nitric oxide still remains in solution in the unchanged ferrous chloride, as may be shown by adding more nitric acid when effervescence occurs, and the liquid becomes lighter in colour. In this case a slight amount of free nitric acid is present, even though the liquor is unoxidised, but it must be in very small quantity. To avoid the formation of the afore-mentioned precipitate many remedies have been proposed. Thus:—Mr. Wilson advocates the addition of 10 per cent. of glycerine; Mr. Druce proposes to dilute the spirit with 50 per cent. of water, and Mr. Rother has brought forward a process which dispenses with the use of nitric acid altogether. He dissolves 1,300 grains of iron in $17\frac{1}{2}$ ounces of hydrochloric acid, mixed with $22\frac{1}{2}$ ounces of water, and having oxidised with 475 grains of chlorate of potash, he adds the spirit and filters. As thus prepared we get a permanent tincture of a light colour, but much weaker than the British Pharmacopœia tincture. If we, however, make a liquor by the chlorate of potash process, and from it a tincture, or directly increase the strength of Mr. Rother's preparation, the chloride produced from the chlorate, being insoluble in alcohol, crystallises out after one or two days in beautiful crystals. Other remedies besides these I have mentioned have been suggested, but I have always found that if care be taken that the liquor is not basic, but rather contains a little free hydrochloric acid, no precipitate is thrown down during a reasonable time, although if the tincture be kept in the dark it becomes darker in colour, while if exposed to light the opposite is the case.

We often see very dark tincture of perchloride of iron, owing to one of several causes. These are, that the liquor may have been boiled during preparation, and a deficiency of hydrochloric acid and presence of basic salts be the result; or that the tincture may have darkened from keeping, with the same results as the last in the long run; or that the liquor, not being thoroughly oxidised, would retain a certain quantity of the compound of ferrous chloride and nitric oxide, $4\text{FeCl}_2\cdot 2\text{NO}$, rendering the tincture made from it very dark.

Instances are met with of the tincture being of a very light colour. This must either be owing to weakness or to its having undergone the second mode of decomposition, which I will now describe. When the tincture is exposed to light for a few days a powerful ethereal odour is usually developed. This takes place in the dark also, but very much more slowly. Should the hydrochloric acid be in slight excess, the liquid also becomes lighter in colour, ferrous chloride being formed. To observe these changes I placed samples of the tincture in the dark and also in the light. Within two days an agreeable odour was noticed in the bottle exposed to light, and by carefully shaking the bottle it was possible, owing to the different refractive powers of the two liquids, to notice a layer of lighter liquid lying on the surface of the tincture. This was easily shaken up and diffused through the whole mass, being readily miscible with it. During the same time, and indeed after many weeks no similar change took place in the sample kept in the dark, as that exposed to the light became lighter in colour, the difference between the two grew more and more marked. Some time ago a quantity of the tincture was submitted to me, which was supposed to contain spir. etheris nitrosi, and it was thought that this had either been put in by mistake or had been pro-

duced by the action of free nitric acid on the alcohol. Not being able to give a definite opinion, I tried to see if I could produce the same smell in a tincture containing no nitric acid. As the liquor from which the tincture had been prepared was made with the B. P. quantity of nitric acid, I thought the statement might be correct, and turned my attention to tinctures made without nitric acid. Two methods of obtaining these were readily available, viz., the old Edinburgh Pharmacopœia process, using ferric oxide and hydrochloric acid, and also Mr. Rether's process. I tried both ways, and after exposing the samples obtained to light I found the same smell as before. The production of the ethereal compounds is not then of necessity owing to nitric acid, though the presence of such would probably produce ethers. As we are aware that ferric chloride in presence of alcohol is quickly reduced to ferrous chloride, nascent chlorine being liberated, it is highly probable that the ethereal compounds consist of all those bodies which are produced by the action of chlorine on alcohol, along with aldehyde.

Without giving any further opinion on the matter, I may state the results of an analysis which was made of the distillate of this tincture by an eminent chemist in this city. Owing to the small quantity of the liquid at his disposal a satisfactory examination was not possible, but he found by far the greater part to consist of alcohol, while aldehyde was readily recognisable, though in small quantity. Of bodies containing chlorine the amount was exceedingly small, so that the nature of these was not determinable. The presence of nitric or nitrous ethers could not be detected, although the sample in question was obtained from the liquor oxidised with nitric acid. As all theory should be supported by experiment, I leave the matter at this point, trusting that some one more experienced than I may investigate fully a subject so interesting from a theoretical point of view.

THE ROSE: ITS CULTIVATION AND USES.

THE use in medicine of the rose dates from a very remote period. Theophrastus, who flourished in the fourth and third centuries before the Christian era, speaks of roses being of many kinds, including some with double flowers, which were the most fragrant; and he also alludes to their use in the healing art. Succeeding writers of every age, down to a recent period, have discussed the virtues of the rose, and although it is scarcely admitted now to possess any special medicinal properties, its beauty remains unchallenged. In mythology the rose found a place as the emblem of silence, and it was supposed that the first flower ever seen was presented by Cupid to Harpocrates to engage him not to divulge the answers of Venus. The ancients in consequence adopted the custom of placing this flower above the heads of those engaged at the banquet, in the banqueting rooms, thereby intimating that the actions of the guests should not be repeated elsewhere, and thus banish from their minds all restraint or fear of publicity. And this idea is still perpetuated in the covert saying of "under the rose." During luxurious days even the warriors crowned themselves with garlands of roses at their principal repast, and Pliny tells us that the delicate meats upon their tables were either covered with the petals of these fragrant flowers or sprinkled with its odorous oils. At a feast which Cleopatra gave to Antony the royal apartments were covered with rose leaves, and the triumvir when dying begged of her that his tomb should be covered with roses and bedewed with their perfume. When the Emperor Nero honoured the house of one of the Roman nobles with his imperial presence, the host was expected, in addition to the floral decorations, to follow the royal custom of playing fountains with rose-water, an indulgence only accomplished at an enormous expense. So ancient is the custom of blending the fragrance of the rose with the delights of life that the author of the "Arabian Nights" mentions, as will be remembered, in the story of Aboulhassan, that when the Prince of Persia visited the Queen and had partaken of refreshments the slaves brought him golden basins filled with odoriferous water to wash in, and after the declaration of love by the Queen and the Prince, both having fainted, they were restored by throwing upon their faces odoriferous water, and the application of scents.

Much as roses were prized by the ancients, no preparation such as rose-water or attar of roses was obtained from them.

The liquid that bore the name of rose oil is stated by Dioscorides to be a fatty oil in which roses had been steeped. In Europe a similar preparation was in use down to the last century, *oleum rosarum*, *rosatum* or *rosaceum*, signifying an infusion of roses in olive oil. The first allusion to the distillation of roses is to be met with in the writings of Joannes Actuarius, who was physician to the Greek Emperors at Constantinople towards the close of the thirteenth century. Rose-water was distilled at an early date in Persia, and Nisibin, a town north-west of Mosul, was famous for it in the fourteenth century. Kämpfer speaks with admiration of the roses he saw at Shiraz (1683-4), and says that the water distilled from them is exported to other parts of Persia, as well as to all India; and he adds, as a singular fact, that there separates from it a certain fat like butter, called *Ættr gyl*, of the most exquisite odour, and more valuable even than gold. Amongst the Mexicans the rose was employed in the worship of their gods, and in the great temple of their true god, the high priest, when he officiated, was crowned with roses. The Roman Catholic Church has still preserved the use of these flowers in its most sacred ceremonies, as it is always the rose which is strewn before the Holy Sacrament in solemn procession. There is now to be seen at Rome, in the church of St. Susan, an old mosaic which represents the Emperor Charlemagne in the attitude of kneeling whilst he receives from St. Peter a standard covered with roses. The custom of blessing the rose is still preserved, and the day is called *Dominica in rosâ*. They make, likewise, in Rome artificial roses of pure gold, which are blessed by the Pope on the first Sunday in Lent, and after being carried in procession they are sent to some one or other of the sovereigns of Europe. Pope Julius II. sent a consecrated rose dipped in chrism and perfumed with musk to Archbishop Warham, April 5, 1510, to be presented to Henry VIII. at high mass with the apostolical benediction. The king received the precious rose and more precious benediction with profound reverence and excessive joy, but it is well known how soon the recollection of this rose and the act which accompanied it faded from the royal memory.

In France, Madame de Genlis tells us that formerly the rose was considered so precious that in several parts of the country the inhabitants were not allowed to cultivate it, as if all but the powerful were unworthy to enjoy such a gift of Nature. At other times is mentioned among the ancient rights of manors the power to levy a tax or tribute of so many bushels of roses for the provision of rose-water for their lord, whose table was also covered with rose leaves instead of napkins. The French Parliament had formerly a great day of ceremony, called "*baillée des roses*," because great quantities of roses were then distributed. In our own country, during the reigns of the Tudors rose water was largely in use, for we find it appears among the charges at an Oxford University dinner, September 5, 1570. During the civil wars of the Houses of York and Lancaster, we are told, there was discovered a rose tree at Longleat, which bore white flowers on one side and red upon the other, prognosticating both the divisions and meeting of the two royal families, and it was pretended upon the marriage of Henry VII. to Elizabeth, daughter of Edward IV., that the rose first appeared with mixed petals of red and white, and this variety is still recognised throughout Europe as the emblem of that union by the name of the "York and Lancaster Rose."

The cultivation of the rose has attained a commercial importance at the present time which it is almost impossible to estimate. It is found under an infinity of varieties in all the temperate regions of the globe. In France, in the district of the Vaar, the flower harvest includes no less than 1,475,000 lbs. of orange blossoms, 530,000 lbs. of roses, 100,000 lbs. of jasmine, 75,000 lbs. of violets, 45,000 lbs. of acacia, 30,000 lbs. of geranium, 24,000 lbs. of tuberose, and 5,000 lbs. of jonquil. A well-known perfume manufacturer at Cannes uses annually 140,000 lbs. of rose leaves alone, and other perfume-laden flowers in proportion. It is remarkable that the perfumes obtained from these flowers are the types of nearly all flower orders; thus, if we blend jasmine and orange, the result is a scent like sweet pea; when jasmine and tuberose are mixed, the perfume is that of the hyacinth; violets and tuberose resemble lily of the valley.

In India there is a large cultivation of the rose for the purpose of making rose-water and attar at Ghazipur on the Ganges, at Lahore, Amritzur, and other localities, but the produce is wholly confined to the country. In his journal of Himalayan travel Dr. Hooker mentions a visit to the town of

Ghazipur, which he found surrounded with fields covered with low-growing rose bushes, red with blossoms in the morning, all of which were plucked long before mid day. From other sources we are informed that there are at Ghazipur 300 biggahs, or about 150 acres, of ground laid out in small detached fields as rose gardens, most carefully protected on all sides by high mud walls and prickly pear fences, to keep out the cattle. These lands, which belong to the zemindar, are planted with rose trees, and are annually let at so much per biggah for the ground, and so much additional for the rose plants—generally five rupees per biggah and twenty-five rupees for the rose trees, of which there are 1,000 in each biggah. If the season be good, this biggah of 1,000 rose trees should yield one lac of roses. Purchases of roses are always made at so much per lac. The price of course varies according to the year, and will average from 40 rupees to 70 rupees. The rose trees come into flower at the beginning of March, and continue so throughout April. Early in the morning the flowers are plucked by numbers of men, women and children, and are conveyed in large bags to the several contracting parties for distillation into rose water. The cultivators themselves rarely manufacture.

The native apparatus for distilling the rose-water consists of a large copper or iron boiler, well tinned, capable of holding from 8 to 12 gallons, having a large body with a rather narrow neck, and a mouth about 8 inches in diameter; on the top of this is fixed an old pot or degh-chee, or cooking vessel, with a hole in the centre to receive the tube or worm. This tube is composed of two pieces of bamboo fastened at an acute angle, and it is covered the whole length with a strong binding of corded string, over which is a luting of earth to prevent the vapour from escaping. The small end, about 2 feet long, is fixed into the hole in the centre of the head, where it is well luted with flowers and water. The lower arm or end of the tube is carried down into a long-necked vessel or receiver, called a bhulka. This is placed in a pot of water, which, as it gets hot, is changed. The head of the still is luted on to the body, and the long arm of the tube in the bhulka is also well provided with a cushion of cloth, so as to keep in all vapour. The boiler is let into an earthen furnace, and the whole is ready for operation.

There is a great variety of rose-water manufactured in the bazaar, and much that bears the name is nothing more than a mixture of sandal oil. The best rose-water, however, procurable in the bazaar, may be computed as being the proportion of 1,000 roses to a seer of water; from 1,000 roses most generally a seer and a-half of rose-water is distilled, and perhaps from this even the attar has been removed. The boiler of the still will hold from 8,000 to 12,000 or 16,000 roses. On 8,000 roses from 10 to 11 seers of water will be placed, and 8 seers of rose-water will be distilled. This, after distillation, is placed in a carboy of glass, and is exposed to the sun for several days to become pukka or ripe; it is then stepped with cotton, and has a covering of moist clay put over it; this becoming hard, effectually prevents the scent from escaping. This is the best that can be procured, and the price will be from 12 to 16 rupees.

To procure the attar, or otto of roses, the roses are put into the still, and the water passes over gradually, as in the case of the rose-water process; after the whole has come over, the rose-water is placed in a large metal basin, which is covered with wetted muslin, tied over to prevent insects or dust getting into it; this vessel is let into the ground about 2 feet, which has been previously wetted with water, and it is allowed to remain quiet during the whole night. The attar is always made at the beginning of the season, when the nights are cool; in the morning the little film of attar which has formed upon the surface of the rose-water during the night is removed by means of a feather, and carefully placed in a small phial; and day after day, as the collection is made, it is placed for a short period in the sun; and after a sufficient quantity has been procured, it is poured off clear, and of the colour of amber, into small phials. Pure attar, when it has been removed only three or four days, has a pale greenish hue; by keeping it loses this, and in a few weeks' time it becomes of a pale yellow. The first few days' distillation does not produce such fine attar as comes off afterwards, in consequence of the dust or little particles of dirt in the still and the tube being mixed with it. This is readily separated as it sinks to the bottom of the attar, which melts at a temperature of 84 degrees.

From one lac of roses it is generally calculated that 180 grains, or one tolah, of attar can be procured. More than this can be obtained if the roses are full-sized and the nights cold

to allow of the congelation. The attar purchased in the bazaar is generally adulterated, mixed with sandal oil or sweet oil. Not even the richest native will give the price at which the purest attar alone can be obtained, and the purest attar that is made is sold only to Europeans, selling at from 50 to 90 rupees the tolah.

The chief use which the natives appear to make of the rose-water, or the sandal attar as they call it, is at the period of their festivals and weddings. It is then distributed largely to the guests as they arrive, and sprinkled in profusion in the apartments. A large quantity of rose-water is sold at Benares, and many of the native rajahs send over to Ghazipur for its purchase. The value of the roses sold for the manufacture of rose-water may be estimated at 15,000 to 20,000 rupees a year, and from the usual price asked for the rose-water, and for which it is sold, there may be profit of 40,000 rupees. The natives are very fond of using the rose-water as medicine, or as a vehicle for other mixtures, and they consume a good deal of the petals for the conserve of roses, or gool-kand as they call it. The delightful fragrance from the Ghazipur rose fields can be scented at seven miles' distance on the river Ganges.

The chief locality for attar of roses, and that by which European commerce is almost exclusively supplied, is a small tract of country on the southern side of the Balkan Mountains in the Turkish province of Recundia. The principal seat of the trade is the town of Kizanlik, in the fine valley of the Tunja. The other important districts are those of Philippopolis, Eski, Zaghra, Yeni Zaghra, and Tahirpan, which, with Kizanlik, were estimated in 1859 to include 140 villages, having 2,500 stills. The rose is cultivated by Bulgarian and Turkish peasants in gardens and open fields, in which it is planted in rows as hedges, three to four feet high. The best localities are those occupying southern or south-eastern slopes. Plantations in high mountainous situations generally yield less, and the oil is of a quality that easily congeals. The flowers attain perfection in April and May, and are gathered before sunrise. Those not wanted for immediate use are spread out in cellars, but are always used for distilling the same day. The apparatus is a copper of the simplest description, connected with a straight tin tube, cooled by being passed through a tub fed by a stream of water. The charge for a still is 25 to 50 lbs. of roses, from which the calyces are not removed. The first runnings are returned to the still; the second portion, which is removed in glass flasks, is kept at a temperature not lower than 60° F. for a day or two, by which time much of the oil, light and fluid, will have risen to the surface. From this it is skimmed off by means of a small tin funnel having a fine orifice, and provided with a long handle. There are usually several stills together. The harvest during five years, 1867-71, was reckoned to average somewhat below 400,000 meticals, or 4,226 lbs. avoirdupois; that of 1873, which was good, was estimated at 500,000 meticals, value about 70,000*l.* The rose grown is the *Rosa damascena*, a tall shrub with semi-double light-red (rarely white) flowers of moderate size, produced several on a branch, though not in clusters. Formerly attar of rose came into commerce by way of Austria; it is now shipped from Constantinople. From the interior it is transported in flattened round tin bottles, called *kunkumas*, holding from 1 to 10 lbs., which are sewn up in white woollen cloth. These sometimes reach this country, but more commonly the attar is transferred at Constantinople to small white glass bottles, ornamented with gilding, imported from Germany.

The particular variety grown in England for medicinal use is known in the English gardens as the cabbage rose, but other varieties are cultivated for similar purposes on the Continent. The rose cultivated at Pateaux, near Paris, for druggists' use, is called the *Rose de Pateaux*, whilst the *Rosa pallida* of the older English writers on drugs was called the damask rose, but that name is now applied at Mitcham to *Rosa Gallica*, which has very deep-coloured flowers. The cabbage rose is cultivated in England to a very small extent, rose-water which is made from its flowers being procurable of a better quality and at a lower cost in other countries, especially in the south of France. At Mitcham, whence the London druggists have long been supplied, there were very recently from eight to ten acres planted with this rose, but a supply is also derived from the market gardens of Putney, Hammersmith and Fulham. The attar of roses is of no medicinal importance, but serves occasionally as a scent for ointments. Rose water is sometimes made with it, but it is not so good as that distilled from the flowers. Attar is much used in perfumery, but still more in the scenting of snuff.

VASELINE.*

By J. MOSS AND A. W. GERRARD.

VASELINE was first brought before the notice of Mr. Moss by Professor Otis, of New York, who stated that the article was largely used in the United States as a basis for ointments, and by himself for lubricating surgical instruments and so facilitating their introduction into the passages. Dr. A. W. Miller appeared to think that vaseline and cosmoline were merely artificial mixtures of paraffin wax, with bodies of an allied nature, or with common lard; indeed, he submitted a formula which should produce an equivalent to cosmoline if not that body itself, but the product was only a partial success. The manner in which the articles had been introduced gave them so much the character of nostrums that they had not been altogether favourably received by the medical profession and the press. In justice to the manufacturer of vaseline, it should be stated that he makes no secret of the origin and mode of preparation of his speciality, which he has patented, or of what he conceives to be its nature. He states that it is the residue of the distillation of petroleum, purified by filtration through animal charcoal, and calls it "petroleum jelly." He further says distinctly that it contains no paraffin, but it is difficult to agree with him on this point, although his sincerity need not be questioned on that account. He must mean that vaseline is not an article made up of paraffin wax with other substances, but having regard to its source and the process by which it is obtained, it must probably consist merely of a mixture of paraffins. If such a mixture possesses in every respect advantages over other bodies, such as lard, simple cerate, &c., there can be no reason if the price suits why it should not be used, but a thorough understanding should be come at as to its composition.

Vaseline is a pale yellow, translucent, slightly fluorescent semi-solid, melting at about 37° C. Specific gravity 0.840 at 55° C. It is inodorous, non-volatile at ordinary temperatures, but distils with slight decomposition under pressure. It is insoluble in water, slightly soluble in alcohol, freely in ether, and miscible in all proportions when melted with fixed or volatile oils. It mixes in all proportions with glycerine of the ordinary strength, but the mixture is destroyed by the addition of water. Hydrochloric acid and liquor potassæ are without action upon it.

By boiling a portion of vaseline with water, filtering the aqueous fluid, and evaporating, Mr. Moss was able to prove the absence of glycerine or of any notable quantity of anything soluble in water. The properties of vaseline on which greatest stress are laid are its indifference to reagents and its unchangeableness on exposure to air, and in this it resembles paraffin. Ointments which are liable to change, such as those of iodide of potassium and of sulphur, when prepared with vaseline as the basis, and kept in loosely covered pots, were not altered at the end of ten weeks. Nor does vaseline itself become rancid even when exposed to the air under circumstances most favourable to the development of rancidity, and in this there is a strong resemblance to paraffin. Byasson has shown that American petroleum contains a number of paraffins, capable of being distilled, and with melting points ranging between 30° and 68° C. Vaseline may itself be distilled, and its conduct under distillation much resembles paraffin.

After showing at some length the probability that vaseline is a combination of paraffins, Mr. Moss said:—It seems to me to supply what has been a *désideratum* ever since the first unguent was used—a bland, inodorous, unchangeable, agreeable basis. The manufacturer puts forward other claims for it, and urges that as a simple application it possesses curative properties of its own, and taken internally is good for coughs, colds, sore throat, &c. He informs me that it is largely used in the United States as a pomade; it will take any perfume. Dr. E. Guernsey, of New York, editor of the *Medical Union*, testifies to its value in various forms of eczema, tetter, and ulcerated

surfaces, with or without discharge. He says, "In nasal, laryngeal, and bronchial catarrh it ranks among the very best of our remedies, often giving relief when all else have failed. It is in my estimation one of the most valuable remedies in our armament of drugs." It is highly probable that at a reasonable price vaseline will receive many applications in pharmacy.

Mr. A. W. Gerrard describes vaseline as being in colour of a pale translucent yellow; its consistence that of a slight jelly, soft and unctuous to the touch; tasteless and odourless, and melting at 94° Fahr. It is chemically neutral and unoxidisable, and has, therefore, the desirable and important quality of freedom from rancidity, which is the most objectionable characteristic of the fats in ordinary use. In its behaviour to reagents it may be likened to paraffin, which is characterised by the obstinacy with which it resists change. Applied to the skin or an open wound it is readily absorbed, occasioning neither pain nor irritation.

Mr. Gerrard proposes this substance for use as a basis for suppositories and pessaries. Alone it is of too soft a character, requiring the addition of some denser body to give it solidity. Such a substance is found in paraffin. This, when melted with vaseline in the proportions of one of the former to four of the latter, forms on cooling an excellent basis of firm consistence and elegant appearance, melting at the temperature of the human body. Suppositories made therefrom readily harden in and easily leave the moulds. They are somewhat more greasy to the touch than those prepared from oil of theobroma, but they possess some advantages over it. 1st. Having a melting point near the temperature of the body they melt slowly into an unctuous mass which is cleanly and causes no inconvenience to the patient. 2nd. The absence of rancidity and liability to change give the preparations of vaseline a more reliable and permanent character. 3rd. By reason of its power of contraction being greater than that of oil of theobroma, the suppositories leave the moulds with greater ease. It remains to be seen whether the present high price of the article, viz., about 4s. 6d. per pound, will exclude it from the purposes for which it is adapted.

Mr. Martindale said that what the manufacturers disclaimed was using paraffin wax in making vaseline, or that it was an artificial compound at all, but he thought they agreed that paraffin could be got out of it. He thought it was specially suitable for the preparations of diluted nitrate of mercury ointment, which, when prepared in the ordinary way, becomes rancid in about twenty-four hours. But if one part of the ointment is diluted with seven of vaseline, it will keep. A sample was shown which was made on November 14, and which was still bright and unoxidised, nor had the mercury been reduced to the metallic state, which would have been the case with the Pharmacopœia preparation. This was also the case with the ointments of zinc and lead. The mixture of vaseline with glycerine can be separated by melting the mixture, when the glycerine goes to the bottom and the vaseline rises to the surface. Vaseline would undoubtedly make a very elegant pomade. Cosmoline is of two consistences, one resembling vaseline, and melting at about 90°, the other at about 105°. Undoubtedly the harder consistence was due to its containing more paraffin wax. That could be added to the vaseline, but the mixture was not like vaseline itself. On cooling the paraffin separated from it, and the mixture required beating to form a homogeneous ointment afterwards. Vaseline took the colour from alkanet root very readily, and with a little perfume, such as otto of rose, formed an elegant lip salve. He could scarcely agree with Mr. Gerrard that it was suitable for forming suppositories. He found the melting point of a mixture of vaseline with one-seventh of paraffin wax to be somewhere about 100° Fahr., which was slightly above the temperature of the body. It was desirable that this melting point should be below the temperature of the body.

Mr. Gale confirmed what Mr. Martindale had said. He exhibited some samples of nitrate of mercury ointment diluted with vaseline, zinc ointment, and red oxide of mercury ointment, all in capital preservation.

The President and Professor Redwood having commented briefly on the substance,

Mr. Allechin raised an objection. His experience was that, if they wanted the medicinal property of any of those agents, such as nitrate of mercury or zinc, there was no better menstruum than lard. Paraffin, of all substances, appeared to be most objectionable, inasmuch as he felt quite certain that it would be found not to be absorbed by the skin. He knew that

* Abstracts of two Papers read at an evening meeting of the Pharmaceutical Society of Great Britain, February 2, 1876.e

lard was despised, but there was no substitute for it if they wanted the medicaments to be absorbed into the skin or the surrounding parts.

Mr. Williams coincided with the last speaker. He hoped that pharmacists would not permit themselves to recommend an article for medical use before it had been thoroughly investigated medicinally as well as practically. Paraffin was not one of the substances which, by well-known physical laws, would be indicated as likely to be absorbed by the system; whereas lard was admirably adapted for absorption, and oleic acid was still better. He, therefore, hoped that as pharmacists they would hesitate to appear to recommend in any way, by the authority or the name of the Society, these new American preparations until they were very much better convinced by experience that their use as vehicles for medicinal agents was advantageous.

Professor Atfield commented on the indefinite character of the article, and the various temperatures at which different samples appeared to melt.

In reply to an inquiry by Mr. Greenish, Mr. Gerrard stated that the suppositories he had made contained one-fifth of paraffin; they had been tried that day at University College Hospital, and had been found perfectly soluble. Mr. Greenish thought that paraffin made prettier suppositories than any he had ever met with, but he believed that, medicinally, paraffin would be the worst possible substance for such preparations.

Mr. Moss, in reply to the criticism of Mr. Allechin and Mr. Williams, said that, as a matter of fact, paraffin and vaseline were used very generally for external applications in the United States, and they were, indeed, used alone. They possessed properties which physicians found extremely useful, and which showed that they must be absorbable by the skin to some extent, or, if not absorbed, this negative property might perhaps be an advantage. As to recommending vaseline, he did not go so far. He had simply made an investigation of its physical properties and some of its chemical ones, and detailed the results as plainly as possible, adding a little of what had been said by others.

Mr. Kingzett had, within the last twenty-four hours, examined a specimen of vaseline furnished by Mr. Moss, and, after remarking on its chemical properties, said:—In regard to the observations made by Mr. Williams and Mr. Allechin, he, as a physiological chemist, would remark that whether lard or vaseline was used as the basis of ointments, they served a common purpose, of presenting to body surfaces the desired medicines, but exercising no specific actions themselves. At any rate, the vaseline possessed many advantages over lard, the most striking of which was its inability to absorb oxygen, a property which would render it especially useful in protecting surgical instruments, &c., from rust.

THE JAPANESE CALOMEL.

AMONGST the useful applications made by the Japanese of mercury, the preparation of calomel, called by them "*Kei-fun*," or "light-powder," is described in a paper read before the Asiatic Society of Japan. Dr. Geerts, the author, states that this interesting preparation was known since the earliest ages to the Chinese, long before we in Europe had any knowledge of calomel or corrosive sublimate. Our first knowledge about both the chlorides of mercury dates from the time of the Arabian chemist Guber, who has given a prescription which differs but slightly from the old Chinese method of preparing *Kei-fun*. The product obtained by Guber's method is a mixture of calomel with a little corrosive sublimate, whilst the Chinese knew how to prepare calomel (*Kei-fun*) and a kind of corrosive sublimate (*sho-ko*), each separately. Until the 16th century we did not make in Europe a careful distinction between these two chlorides of mercury. Libavius and Oswald Crall first prepared pure calomel (1606-1608) under the name of *Draeo mitigatus*, *Manna metal-lorum* or *Mercurius dulcis*. It seems very probable that the old Egyptians learned also the preparation of this substance from the Chinese, and we believe that there could be found many proofs of the influence exercised by old Chinese works on the sciences of the West if the numerous volumes of the old library of Alexandria had not been so barbarously burnt.

According to Ranzan, *Kei-fun* was for the first time manufactured in Japan in the year 741, in the province of Isé. It was then presented to the Empress, Gen-iniyo, who reigned at that time. Remarkably enough, the preparation of this substance has regularly been effected in this province up to the present time, and the *Isé-oshirir* (cosmetic of Isé), as this calomel is sometimes called, has even largely contributed to the glory of the celebrated temples of Isé. Many of the travellers recovered their health or that of their parents by the use of this important medicine, and attributed the excellent medical properties of this substance largely to the *Kami* of the Isé.

The Chinese or Japanese calomel occurs, according to its quality, in fine, brilliant, transparent, flat crystal plates, or as a crystalline powder. Although pure when it is properly made, it is very often—we might say nearly always—adulterated with variable quantities of small crystalline gypsum (*selenite*), or with mica-powder, or with both these substances. Dr. Geert states that he once found even more than one-fourth to consist of sulphate of lime. It is prepared to some extent in Japan (Isé, Osaka) but it is also imported in considerable quantities by the Chinese merchants of Nagasaki. The mode of preparation is the following:—Two parts of alum, one part of mercury, and one part of common salt are mixed in a mortar with a little water until a very accurate mixture is obtained, in which no globules of mercury can be perceived. After being dried this mass is placed in an iron bowl, which is closed with a mixture of earthenware, carefully plastered with a mixture of loam, ashes, and salt. The whole is then gradually heated on a charcoal fire, and the covering plate in the meantime cooled with wet cloths. The calomel sublimes within four or five hours on the inner side of the cover as a very porous, light, crystalline powder. The more the sublimate has a light, soft, and porous appearance, the more it is esteemed. There are several other prescriptions for preparing this salt, which are kept secret by the manufacturers. The above prescription is given by the large Chinese *Materia Medica*. The sulphate of lime, or selenite, and mica-powder are added afterwards purposely to make this expensive mercurial preparation heavier and cheaper. If the calomel thus obtained has undergone a second and third sublimation it is thought to be much better, and bears then the name of *Fun-sô*. This substance is really calomel in small, soft, tubular crystals.

The *Kei-fun* is found in every Japanese drug shop, packed in oblong square wooden boxes or black shining paper. It is a medicine which is extensively used, and often abused by excessive doses, so that the number of sufferers by mercurial poisoning, or the effects of so long protracted use of quicksilver preparations, is by no means small in Japan. Foreign-made calomel is now becoming more and more popular, especially in the open ports and those places where the influence of the Dutch medical school has been of some importance. The Japanese distinguish this preparation by the name of *Karomera* or *Kan-ko*. In Osaka and Hiogo calomel is also prepared after the foreign manner.

Provincial Reports.

GLASGOW CHEMISTS' AND DRUGGISTS' ASSOCIATION.

The usual monthly meeting of this society was held in the West Hall of Anderson's University on Wednesday evening, January 19, 1876, the President, Mr. William Groig, in the chair. Amongst other donations was that of five volumes of the "*Year-Book of Pharmacy*" to the association library from Professor Atfield. Thanks were voted to the executive of the Pharmaceutical Conference for their kindness. Mr. R. S. Nelson, of Messrs. George Mason & Co., exhibited a number of chemical and electrical apparatus, the uses of which he described, and gave some practical illustrations. Mr. John C. Hunter, A.P.S., President of the Assistants' Section, afterwards read a short paper on the deposit obtained from the tinct. ferri perchlor., showing it to be a compound of iron and silica. After remarks by Messrs. Kinninmont, Fairlie, Nelson, Groig, &c., hearty thanks were passed to Messrs. Nelson & Hunter for their valuable and instructive communications.

HALIFAX.

HALIFAX AND DISTRICT CHEMISTS' AND DRUGGISTS' ASSOCIATION.

THE first meeting for this year was held at the Old Cock Hotel, on Thursday, February 10, when Mr. Robert Brook, who succeeded Mr. Jessop in the president's chair in November last, delivered an inaugural address. The following topics were treated in a very able and suggestive manner:—The new drugs introduced or re-introduced into medical practice in this country during the past year, scarcely any of which had appeared to be in demand in the locality; the prices obtained for dispensing viewed in relation to general adherence to the prices agreed upon by the association, and the payment for time, skill, and stock, compared with the remuneration (somewhat increased of late years) of the artisan class; the desirability of an increased return for labour expended, the reasons for such increase, and the difficulty of obtaining it; the present aspect of the patent medicine trade, its recent extensions, and probable contingencies, were matters dealt with in the course of an address which bore much evidence of research, care, and ability.

The President was warmly congratulated on resuming his seat, and a long and interesting discussion followed, in which it was agreed to take action on some of the suggestions at an early date. The Sheffield analyst's report, and recent law cases touching the duties, fidelity, and privileges of chemists, were the subject of general remark.

A communication from the assistants and apprentices employed in the town was read by the secretary, Mr. Shaw, and received very favourably. The association has for some time possessed a small but useful reference library, and the young men tender a handsome sum for the purpose of adding new books, and suggest certain works, with regulations for general circulation. An influential committee was appointed to consider the proposal and report.

LIVERPOOL CHEMISTS' ASSOCIATION.

THE seventh general meeting was held at the Royal Institution, January 20, 1876, the president, Mr. A. H. Mason, F.C.S., in the chair. Mr. W. S. Howarth and Mr. James Crean were elected members.

Several inquiries were found in "the question box," which were replied to by the members present.

The evening was devoted to miscellaneous communications. Mr. Thomas Garside, F.C.S., stated that whilst analysing some samples of kaolin he noticed, when ignited in contact with chloride of magnesium, the aluminium became soluble in water. He asked for an explanation of the phenomenon: his opinion was that it was probably due to an interchange of acids, resulting in the formation of chloride of aluminium and silicate of magnesium.

Mr. Armstrong and Mr. Tanner spoke of the new product recently introduced into this country from America called "vaseline;" they thought it would probably be found useful as a substitute for lard as a basis for ointments. It was a solid substance, without smell, unalterable in air, and not acted upon by acids or alkalis. It was also tasteless and supposed to be obtained in the purification of petroleum.

There was a discussion on a subject of sanitary importance to Liverpool, to which Mr. Armstrong called attention, viz., the fact that the authorities were permitting town refuse to be thrown upon building land, and the houses built upon this refuse were most unhealthy. Messrs. Sanderson and Parkes had strongly condemned the practice in their official report, still it was persisted in. The president, Messrs. Davies, Garside, and Tanner, took part in the discussion.

The eighth general meeting was held on the 3rd inst., the president, Mr. A. H. Mason, F.C.S., in the chair. There was a large attendance of members.

Mr. E. H. Merton was elected a member.

The following donations were announced:—Current numbers of the *Pharmaceutical Journal* and the *American Chemist*.

The president exhibited a specimen of pure crystallised glycerine, kindly forwarded to him by Messrs. Dunn & Co., of Sterling Chemical Works, West Ham, a portion of the bulk of 40 lbs., the crystallisation of which had been induced by exposure to the cold of the early part of January, combined with the agitation of a journey by rail. Its specific gravity at

its melting point, 60° F., was found by Dr. Van Humel Roos to be 1.261.

Mr. S. W. Lee exhibited some fine specimens of salts of vanadium, kindly lent for exhibition by Messrs. Johnson, Matthey & Co., London, consisting of chloride of vanadium, sulphate of vanadium, oxalate of vanadium, phospho-vanadic acid, pure vanadate of soda, ortho-vanadate of potash, chloride of sodium and vanadium, divanadate of soda, ortho-vanadate of ammonia, divanadate of ammonia, divanadate of lead, divanadate of potash. This metal has latterly been the subject of active research, and from recent experiments will probably soon become an important commercial article.

Mr. E. W. Parnell, F.C.S., read a paper on "Electricity applied to Analytical Chemistry," in which he gave an account of the manner in which electricity has been applied for the determination of copper, nickel, and cobalt in the Government mining establishment at Maudsfeld, Eisleben. He also entered into details showing how the science may be further applied, both in analytical and scientific chemistry.

In the discussion which followed, the president, Messrs. Davies, Garside, Simpson, and others took part, and an unanimous vote of thanks to Mr. Parnell closed the proceedings.

The next meeting will be held on Thursday evening, the 17th inst., when Mr. Charles T. Kingzett will deliver a lecture on "The Relation of Chemistry to Physiology and Pathology, with Special Reference to the Brain." The lecture will be illustrated by diagrams and experiments.

OLDHAM CHEMISTS' AND DRUGGISTS' ASSISTANTS' AND APPRENTICES' ASSOCIATION.

ANNUAL REPORT.

THE annual meeting of the above association was held in the Church Institute on the 6th inst., Mr. John Taylor, president, in the chair.

The Secretary read the report, which stated that during the past year the association had been fairly successful. At the first meeting it was decided to open the session by the reading of papers in relation to pharmacy. Several essays on botany, chemistry, and materia medica and pharmacy have been given by the members, as follows:—

"The Vegetable Cell," by Mr. W. Hurst; "The Pharmacopœia," by Mr. J. Wood; "Iodine" and "Botany," by Mr. W. Burrows; "Chlorine" and "Opium," by Mr. J. Hall; "The Atmosphere," by Mr. E. Richards; "Cinchona and its Preparations," by Mr. T. Pennington; "Dispensing," by Mr. J. Taylor; "Ipecacuanha and its Preparations," by Mr. Thatcher.

The Treasurer's statements showed a balance in hand of 1l. 8s. 1d., although there had been some exceptional expenses incurred during the year.

The association had been again indebted to the Pharmaceutical Society for the journal weekly, and to the Pharmaceutical Conference (through Professor Atfield) for the "Year-Book of Pharmacy."

The election of officers for the ensuing year then took place, and resulted as follows:—

President, Mr. John Taylor; vice-president, Mr. John Wood; secretary, Mr. Edwin Richards; treasurer, Mr. Walter Hurst; librarian, Mr. Walter Burrows.

The President, being called upon to address the meeting, said he was pleased to find that the report read by the secretary was very encouraging, as was also the treasurer's financial statement, and he saw no reason why the Oldham Chemists' and Druggists' Assistants' and Apprentices' Association should not be on a level with most of the pharmaceutical societies of Great Britain. This end could only be attained by the united energy of each individual member. The society had already accomplished some good work since its establishment, and not the least valuable was that relating to the early closing of our shops, which had been a great boon to the assistants and apprentices. It had also been the means of assisting its members in passing the various examinations. He hoped at the next annual meeting to report that some more of the members had passed during the year.

A hearty vote of thanks having been given to the retiring officers, the meeting was brought to a close.

WOLVERHAMPTON.

THE Association of Chemists and Druggists held their annual meeting on January 13, Mr. W. Fleeming, president, in the chair.

The reports indicated prosperity both financial and educational.

The president was unanimously re-elected. For the post of vice-president, Messrs. R. H. Lowe (Wolverhampton), Kearns (Bilston), and T. Reade (Wolverhampton), were nominated; the first-named gentleman received the highest number of votes, and he was therefore declared elected. The chairman explained that Mr. Lowe had expressed a wish to be permitted to retire from the post, as he had so many other public engagements to attend to. If that gentleman retired, Mr. Kearns would take the post. Mr. Gow was unanimously re-elected treasurer, as also were Messrs. Brevitt and Barrett, the co-secretaries.

The Council was elected as follows:—

Messrs. W. Coleman, C. C. Burnett, W. Cannell, J. Pratt, A. C. Weaver, W. Fleeming, jun., R. H. Kearns, Thomas Reade, and Edward Walker; Messrs. J. Hamp and T. A. Wedge were appointed auditors.

A scheme for holding a *soirée* in connection with the association in February was submitted and approved. It was stated that numerous promises of support had been received from gentlemen in the town.

A lively discussion was started by the chairman on a lecture delivered at their last meeting by Dr. Totherick, "On the relations between medical practitioners and pharmacutists."

He said very considerable objection had been taken to the lecture by the majority of the members of the association. It had gone forth without protest in any shape whatever. He certainly felt astonished, when he read it, that a number of their body, representing the associated chemists of the town and neighbourhood, instead of protesting against it, should have passed a hearty vote of thanks to the lecturer without qualification. Dr. Totherick stated "that there was a popular feeling, whether right or wrong, in favour of getting the physic from the man who prescribed it." He (Mr. Fleeming) demurred to that assertion, and believed the fact to be quite otherwise. With regard to the doctor's assertion "that the tradesman element has been apt to overtop the scientific," of course chemists were of necessity obliged to deal in many other articles besides medicines, for he believed that if all the dispensing in the town were confined to two or three chemists they would be quite unable thereby to eke out anything like a respectable livelihood, but it did not therefore follow that they neglected the scientific element. Dr. Totherick then remarked: "If, however, pharmacutists assiduously devoted themselves to the higher branches of their calling, and proved themselves to be careful, conscientious, and expert dispensers, they would get dispensing to do." Now, if he (Mr. F.) understood the plain English of that sentence, it meant that pharmaceutical chemists were at present not careful, not conscientious, not expert dispensers. Now, gentlemen (he continued) I repudiate strongly, in your name, the imputation conveyed in that sentence. What! has the Pharmaceutical Society been in existence for upwards of twenty years, educating our young men for dispensers, with no better result than that. Then, as to counter prescribing, so strongly condemned by Dr. Totherick, he apprehended that it must exist to some extent from the nature of present circumstances. So long as medical men felt compelled to make the charges they did (of which he did not complain), poor people could not afford to go to them for every ailment from which they or their children suffered, and therefore applied to those chemists in whom they felt confidence. But every respectable, conscientious chemist knew where to draw the line. In simple cases they gave antidotes to the best of their judgment; but when a case required it, they always recommended people to consult a medical man. Then he equally repudiated what Dr. Totherick said about the sale of patent medicines, viz., "I have next to touch upon a nasty subject," and went on to refer to chemists, as follows:—"Their corporate morality in this respect is the very reverse of what it ought to be." He would leave it with the public to judge whether the "corporate morality" of pharmaceutical chemists would not bear comparison with that either of the medical profession or of any other body of tradesmen. Patent medicines had become an established institution. Respectable chemists did not generally recommend them, but people of all grades would have them; and chemists were the legitimate

channel through which they should be supplied to the public. He would say that all respectable chemists thoroughly disapproved of the absurd puffing which was adopted to bring some of them into public notice, but they could not prevent it, and should not be held responsible for it. The doctor then suggests "that this sale should be given up, and all chemists take a firm stand in recommending instead the various recommendations of the Pharmacopœia." But this was a strange alternative to put before them. He thought that if they adopted the doctor's advice they would be trenching far more on the province of medical men than by selling Cockle's pills, Brown's chlorodyne, and many other "patents," all of which he had known to be recommended by medical men, and which he had been in the habit of selling for about 50 years without feeling that it was an "unclean thing," or that he was "humiliating" himself before society in so doing.

Other speakers followed, and the general impression seemed strongly in support of the chairman's remarks.

IRISH PHARMACY.

PHARMACEUTICAL SOCIETY OF IRELAND.

THE monthly meeting of the council of the above society took place on Wednesday, February 2, at the College of Physicians, Kildare Street.

Sir D. Corrigan, M.D., Bart., President, in the chair. The following members were present:—Dr. Aquilla Smith, vice-president, the Right Hon. the Lord Mayor, Mr. William Allen, Dr. Bourke (Limerick), Dr. Collins, Dr. Frazer, Mr. J. Goodwin, Mr. William Hayes, Mr. E. M. Hodgson, Mr. J. T. Holmes, Mr. Pring (Belfast), Professor Tichborne, Dr. Ryan, and Dr. Whitaker (Belfast). The minutes of the previous meeting having been read and confirmed, the President read a letter he had received from the Privy Council informing the council that the bye-laws had been confirmed, and notice thereof published in the *Dublin Gazette* in accordance with the Act of Parliament.

The President suggested that the council should proceed to make the necessary arrangements for holding the examinations, and was of opinion that an examination should take place as early as possible.

Mr. Holmes thought the first thing the council should do was to re-elect the examiners, as suggested by the law officers of the Crown.

After some conversation on the subject it was proposed by Dr. Collins and seconded by Mr. Holmes "That the election of Dr. Smith, Dr. Collins, Dr. Montgomery, and Mr. Draper as examiners be confirmed."

Carried unanimously.

The next matter was to fix the date for the first examination, which, after considerable discussion, was fixed for Wednesday, March 1, at 2 o'clock.

The President said the next business would be the election of a treasurer, who, according to the bye-laws, must be a member of the council.

Mr. Hayes proposed Mr. E. M. Hodgson as treasurer.

Mr. Goodwin seconded the proposition, which was carried unanimously.

On the motion of the Right Hon. the Lord Mayor, seconded by Dr. Ryan, Mr. H. J. Fennell was appointed registrar of the society. This appointment is subject to permission being given by the College of Physicians, Mr. Fennell being librarian to the college.

Dr. Collins, Dr. Ryan, and Professor Tichborne were appointed to make the requisite arrangements for the examinations.

Mr. Holmes handed in the following notice of motion:—

"That the Council of the Pharmaceutical Society request the Chief Secretary to insert a clause in the new Juries Bill to exempt pharmaceutical chemists from service on juries, as is the case in England."

The President suggested that instead of going forward as a notice of motion the council might deal with the matter now.

The motion was proposed by Mr. Holmes and seconded by Mr. Hayes, and carried unanimously.

The registrar was instructed to forward a copy of the resolution to Sir Michael Hicks Beach.

It is expected that a lady will be one of the first candidates for examination.

THE INTERPRETATION OF THE ACT—IMPORTANT TO IRISH DRUGGISTS.

A DEPUTATION from the North of Ireland Chemists' and Druggists' Association waited by appointment on the Committee of the Chemists' and Druggists' Association of Ireland at the rooms of the latter, 172 Great Brunswick Street. The following members of the committee were present: Mr. E. M. Hodgson, president, Professor Tichborne, vice-president, Mr. Hayos, hon. sec., Mr. S. Oldham, hon. treasurer, Mr. Grindley, Mr. J. T. Holmes, Mr. J. O'Brien, and Mr. R. Simpson. The deputation consisted of Messrs. Dobbyn and Hazzlit, of Belfast.

Mr. Dobbyn said they had sought this interview at the request of their society for the purpose of asking the co-operation and assistance of the Chemists' and Druggists' Association of Ireland in some matters connected with the new Pharmacy Act. The first point was the doubtful wording of the clause in the Act reserving the existing rights of chemists and druggists in business on their own account at the time of the passing of the Act. It was his opinion that one of their rights, that is, the right of mixing poisons in such things as preparations for sheep-washes and other agricultural purposes, was taken away, as chemists and druggists were, according to the clause, distinctly prohibited from "compounding poisons."

Mr. Holmes remarked that the subject had come under the notice of the Pharmaceutical Council, and the opinion was that the intention was clearly to reserve whatever rights the trade had hitherto enjoyed, and that the "compounding of poison" meant in physician's prescriptions.

Mr. Dobbyn remarked that the present council might take that view of it, but some future council might take quite another view, and he suggested that the matter should be removed beyond doubt by adding a rider to the bill. He also suggested that a joint deputation from the two associations should request an interview with the Chief Secretary on the subject.

Mr. Oldham said he did not think the question was likely to be raised, but in case it should he would suggest that the societies should indemnify any one that might be prosecuted.

The deputation urged that the society they represented desired the matter to be definitely settled. It was arranged that if they thought it necessary to wait on the Chief Secretary the committee would get representatives to join them.

The next point was that they thought there should be a class of chemists and druggists under the bill, who should pass an examination of a very modified form, enabling them to carry on business and sell poisons, but not to compound prescriptions.

The committee did not think it likely Government would make any such change at present, unless they found the bill did not fulfil its intention.

Some other minor matters were referred to, and the meeting concluded with the discussion of a substantial luncheon, to which the committee entertained the deputation, which was conducted with much animation.

The deputation thanked the committee for the kind and hospitable way in which they had been received, and hoped to have the pleasure of seeing them in Belfast.

PHARMACEUTICAL FESITVITIES.

GLASGOW.

On Thursday evening, January 27, the annual social gathering of the Glasgow Chemists' and Druggists' Association was held in the Crown Hall, Sauchiehall Street; Mr. Greig, President, in the chair, Bailie Blanchard (Edinburgh), Councillor Mount (Glasgow), Drs. A. M. Robertson, T. D. Moffat, R. Bell, A. T. Machattie, John Clark (city analyst), Messrs. T. Davison, A. Kinninmont, John Jaap, J. L. Hatrick, W. Whyte, — Schmitz, — Henderson, A. MacNaught (Greenock), J. M. Fairlie (hon. sec.), &c., supporting him on the platform. In the course of his opening address, the Chairman alluded to early closing, diligence in study, and concluded with an earnest word on behalf of the British Pharmaceutical Conference, which is to meet at Glasgow in August next, this being its third visit to Scotland. An excellent tea and viands having been discussed, a concert was well sustained by Miss Valance and Messrs. Ogilvie and Stuart. The usual votes of thanks brought a

most successful *soirée* to a close. An assembly followed, at which dancing was kept up with spirit till an early hour. Messrs. Miller & Coote's quadrille band was in attendance.

* *

THE festival of the Glasgow druggists is thus reported in a local print (the *Bailie*):—

"The ancient and honourable Association of Druggists recently held their annual festival in Apothecaries' Hall. Bauldy, who was present by special invitation, supplies the following description of the 'spread':—

"The members were not exactly in Court dress, but in the fashion prevalent in the days of our grannies. Their heads were liberally powdered with magnesia, and their faces adorned with tiny bits of court plaster. The night was wet and boisterous, and, on entering the spacious hall, each guest was considerably presented with a warm cup of salts and senna. Some, however, preferred sulphur and treacle, while others took to Indian pink and cream of tartar. All the seats were tastefully decorated with Allcock's porous plasters, which had the effect of keeping the occupants cool and comfortable throughout the evening. Instead of the ordinary table napkin, a piece of sticking-plaster was neatly substituted, and so folded as not to destroy its adhesive properties, with a view to its being made useful afterwards, either as a gift to the Convalescent Home, or being sold to the Infirmary at cost price. The soups were served up in mortars, and dished with pestles; spatulas did duty for fish knives, scoops for spoons, and marble slabs for plates. Tee-totalers had as many seidlitz powders as they could consume. Those of a more convivial nature, and they predominated, were freely supplied with steel and quinine wines of the rarest vintages. Jalap sauce and cantharides mustard added piquancy to the viands, and altogether the *menu* did ample credit to the established fame of the purveyor. A bust of Galen, with the time-honoured symbol of the serpent twining round his temples, surmounted the president's chair. The walls were profusely ornamented with chest protectors, sponges, syringes, trusses, and other appropriate paraphernalia.

"Previous to sitting down to table, the company joined in singing, 'Few are thy days and full of woe.' After each course the countenance of every one looked so unspeakably wretched that the waiters—the oldest and most grave-looking saulies in town—were obliged to turn their backs to hide their gruesome smiles.

"When the cloth was removed the Chairman in a few well-chosen words, alluded to the prosperity of the trade—(A Voice: 'Profession')—and particularly to the foresight displayed a year or two ago, when coals were dear, in doubling their charges for prescriptions and medicines generally, a movement in the right direction, which had raised their profits from 100 to 300 and 400 per cent. 'And why not,' he triumphantly asked. 'Were they not public benefactors? The public could not live without them; they could not even die without them.'

"Songs and recitations followed, the celebrated gravediggers' dialogue in 'Hamlet,' 'Death and Dr. Hornbook,' 'We're wearin' awa, Jean,' and other lively pieces, being feelingly rendered by members of the company.

"An assembly wound up the entertainment, the Chairman leading off with St. Vitus' Dance. After fortifying themselves with cork soles, chest protectors, warm plasters, respirators, and jugs of hot gruel, each took his several way and hurried home."

HULL.

The Hull chemists hold their annual supper on January 27, at the Cross Keys Hotel. Mr. C. B. Bell, President of the Chemists' Association this year, was in the chair, and was supported by a numerous company, including the Sheriff of Hull (Dr. A. K. Rollit), Mr. R. Micks, Mr. Councillor Grotrian, Rev. John Henshall, Mr. Henry Gates (vice-president), Mr. Oldham (hon. sec.), Mr. Leah (Liverpool), Mr. George Myers, Mr. Anthony Smith, Mr. R. Staning, Mr. J. C. Niven, Mr. Wokes, Mr. Briggs, Mr. Escribitt, jun., Mr. William Horsley, Mr. George Beall, Mr. Walton, Mr. Robert Wing, Mr. Ellis, Mr. Hammond, Mr. Grindall, &c.

The President read a letter from the Mayor (Dr. Kelburne King), who expressed regret that his many other engagements prevented his accepting the invitation to be present. Mr.

James Baines, an old and esteemed friend of the association, was kept away by indisposition; and, amongst others, Alderman Seaton, Dr. Gibson and Mr. Conncillor Leak had been unable to attend. The loyal and other prefatory toasts were duly honoured, the Rev. J. Henshall responding to that of the "Archbishop and Clergy of the Dioecse, and the Ministers of the various Denominations."

The President proposed the "Mayor and Corporation." He said the association was much complimented by having as their guest the esteemed sheriff of the borough, Dr. Rollit; and he felt sure that they would all agree with him when he said that gentleman was the most popular man in the borough. He was the local representative of Her Majesty, and had attained to a very honourable position for so young a man; and he (the speaker) congratulated the Corporation on their discrimination in electing Dr. Rollit to that dignified office. He lived in hope of seeing the day when the worthy doctor would represent their important constituency in Parliament.

The Sheriff said he felt very much flattered by the association of his name with the toast of the Mayor and Corporation, though he hardly knew whether he ought to consider himself as belonging to the municipal system. One moment he found himself the centre of that system, and another moment he launched almost into municipal space. The office of Sheriff was almost an anomalous one as regarded the Corporation, and he fancied himself to a great extent the comet of that system. Speaking as a chemist, he might say that if they were to analyse the proceedings of the Corporation they might find traces of acids and personal feeling; but he was glad to say that the most prominent acid in the constitution of that body was assiduity. One word about the Sheriff. He seemed to a great extent to be a social municipal personage. He had no duties connected with the governance of the town, and very few in connection with the Corporation itself; but in social questions he was very glad to have his name associated with theirs. From the times of earliest history—more especially in the days of Robin Hood—the Sheriff had always been a very gay, hilarious personage in society; and he only hoped he might maintain in his character a similar position. He believed he did hold the honourable post of representative of the Queen, but he reminded them that he was also the legal representative of the Hull Chemists' Association—which was equally dear to him.

Mr. Anthony Smith, in proposing the "Town and Trade of Hull," said this was a toast which came home to them all, as it affected the breeches' pocket. He alluded to the increase of trade, and the numerous public buildings which had been added to the town during the ten years he had resided in it; and humorously alluded to the dirty condition of some of the streets, to which he would call the serious attention of the representative of the Council whose name he would couple with this toast. He wished that august body would pass some resolution which might induce householders to wash their door steps every day, for the condition of Prospect Street, Waterworks Street, and others would be a disgrace even to the era of William the Conqueror. If he might use a "hossy" expression, people walking along the muddy pavements ran a risk of breaking down in their back sinews. He then proceeded to speak of a new railway project, and expressed a hope that his fellow-townsmen would rally round Mr. Grotrian in the efforts he was putting forth in that direction.

Councillor Grotrian, in the course of a humorous response to the toast, confessed that he hardly knew what he could better do with regard to Mr. Smith's "hossy" suggestion than to convey it to the Mayor. It was difficult to speak of the trade of Hull without referring in some way to railway matters, and he had had so many opportunities lately of speaking on that subject that he had very little fresh to say about it. Hull had been badly used, and deprived of her natural advantages and position: it was placed on unequal terms with the more northern ports, and he warmly exhorted the members of this association, and all other classes of traders, to unite in freeing the town from the railway monopoly under which it had so long and grievously suffered.

The Sheriff then proposed "Prosperity to the Hull Chemists' Association." He said that although chemistry in its complete development was one of the modern sciences, still it had gained a most prominent position in its association with the industrial arts, with the administration of justice, and with general legislation. Mr. Grotrian had spoken of houses going down to posterity, but if builders understood a little better the chemical composition of mortar, and would make use of the knowledge,

their houses would be more likely to go down to posterity, instead of going down long before they were likely to reach posterity. In agriculture, in the industrial arts, in the detection of crime, and, therefore, in the preservation of life and property, a knowledge of chemistry was daily becoming of greater use and importance; and, at the present moment the scientific development of the atomic theory of Dalton, or, more anciently, of Lucretius, was likely to create a complete revolution in the study of physiology and mental phenomena. Such being its practical and intellectual importance, he was of opinion that elementary chemistry ought to be more generally taught in our schools, and his own experience had entirely justified the requirement by the London University of a knowledge of chemistry and physiology from every candidate for its degrees, in arts no less than in science and medicine. Dr. Rollit then spoke of the advantages of the association, and concluded by proposing the toast, and associating with it the name of the president, Mr. C. B. Bell.

The President, in responding, thanked the members of the association for the compliment they had paid him in electing him to the honourable position he now filled. He had been perfectly happy in the office which he had previously filled as their hon. secretary; but for the honour they had conferred upon him he thanked them most heartily. He trusted that when the presidential mantle dropped from him it would be unsullied and unstained by anything he might have done in connection with the association. It was unnecessary for him to dilate upon the advantages of membership in such an association, which he hoped would continue to prosper and to increase in numbers. He trusted that the duties they undertook with a view to educating the young men would be attended by largely increased results; and that the young men themselves would recognise the advantages of the instruction which the society afforded them, and thus be desirous of acquiring the knowledge that was necessary prior to their passing the Minor examination of the Pharmaceutical Society. There was one matter which had hung as a shadow over the trade of the chemist and druggist during the last few days—he referred to what had transpired at Sheffield with reference to the dispensing of physicians' prescriptions. The report which had appeared in the papers conveyed, he was sorry to find, a very unfair impression on the subject. Certain druggists had the misfortune not to dispense some prescriptions accurately; but it should have been set forth that they were persons who were not accustomed to dispensing. The cases detected by the public analyst were of chemists who carried on business in the lowest parts of the town; and it was a great shame that the whole trade should have been placed under the ban of an improper discharge of their duties, simply because these individuals, who were not accustomed to dispensing, had been placed in such an unfortunate position. He ventured to think that the public analyst should have explained that they came from the back streets, and not have suffered the trade generally to have been stigmatised for the acts of one or two individuals. In conclusion, he expressed the pleasure it afforded him to see so many gentlemen assembled around that festive board; and he took this opportunity of thanking them most heartily for the honour they had done him in so cordially receiving the toast with which his name had been associated.

Mr. Wokes proposed the "Officers of the Society," on whose behalf Mr. Gates responded in a lengthy speech, in which he thanked the members for the compliment paid him in electing him as vice-president. He alluded in feeling terms to their old friend the late Mr. John Hudson, who had recently passed away, and expressed his sorrow that bronchitis had prevented their valued friend, Mr. Baines, from being present that evening. He then dilated on the ethics of chemistry, and created much amusement by the playful humour with which he dealt with the subject.

Mr. Staning gave the "Medical Profession," to which Mr. Briggs responded.

Mr. John Thompson proposed the "Health of the Lecturers," to which Mr. J. C. Niven responded. He thought that in an association like this, in a large town such as Hull, an attendance of 13 young men was not so large as they could desire or expect; but he trusted there would be a marked improvement in this respect next year.

The President next gave the "Health of the Visitors," on whose behalf Mr. R. Micks responded.

Several other toasts were honoured, and the proceedings were enlivened with some excellent songs.

[LIVERPOOL REGISTERED CHEMISTS' ASSOCIATION.]

WE have already reported the formation of a society at Liverpool with the express object of discussing trade questions, leaving matters of scientific interest to the older Liverpool Chemists' Association. This new society dined together at the Adelphi Hotel, on January 18, the chair being occupied by the President, Mr. John Abraham, and the vice-chair by Mr. A. Redford. After the usual loyal toasts had been duly honoured,

The President proposed "The Liverpool Registered Chemists' Association." He said the objects of the association were known to all—it was intended to benefit all, and it was hostile to none. Moreover, whatever raised the chemists and druggists as a body would increase their usefulness to the public. He believed that the society had already done much good; that the hours of business had been shortened and a better general understanding created. The price book had been, he believed, a decided success. He hoped that members of the association, in their efforts to obtain the earlier closing of shops, would not easily be discouraged, and that they would not experience any pecuniary loss; he was sure that they would realise an advantage in the increased comfort and health both of themselves and of their families. He coupled the toast with the name of the honorary secretary, Mr. Wharrie, to whom the association was greatly indebted for the valuable time which he had devoted to it, especially in the preparation of the price book.

Mr. Wharrie, having illustrated the necessity of associations of chemists and druggists for mutual defence by a reference to the recent attack on the trade by the Sheffield analyst, proceeded to sketch the history of the formation of this society. It originated from a meeting of the registered chemists of Liverpool, on March 9 last, called to consider the desirability of forming a price list and the subject of early closing. The work of forming the price list was commenced on July 1: 300 copies had now been printed, most of which he was glad to say had been sold. With regard to the efforts in the direction of early closing, what had been done had not been without fruit. He had received gratifying reports from various members, stating that there was a decided improvement in that respect in the several districts. He believed that the efforts made by the committee had resulted in a *bonâ fide* shortening of business hours among the chemists and druggists generally throughout the town. The success of the association during the past six months argued well for the future; much, however, yet remained to be done.

Mr. Redford proposed as the next toast "The Liverpool Chemists' Association," which had done much good for the trade in Liverpool, and occupied a deservedly high place in the esteem of the country. He was reminded that night of a similar occasion when the association entertained at a farewell dinner two of their best friends when about to leave our shores to reside in Canada, Dr. John Baker Edwards and Mr. Nathan Mercer. On that occasion he had the honour of having those two much-prized co-workers on his right and left hand as guests; and some of them, he said that night, were disposed to think they would "ne'er look on their like again." But while they had missed them greatly, yet the association lived on, and they had not yet seen its palmiest days. The present session showed the vitality and talent that still characterised its proceedings. He concluded by asking the company to receive the toast of the Liverpool Chemists' Association very heartily, coupling with it the name of the President, Mr. Alfred Mason.

Mr. Mason congratulated both associations on the successful formation of the Registered Chemists' and Druggists' Association, and he had every confidence that if unanimously supported it would strengthen the position of the Chemists' Association and help to maintain and increase that scientific standard for which it had a well-earned reputation. The Chemists' Association was now composed of different elements—the chemists and druggists, the scientific chemists, and gentlemen who had a kindred love of the science—and, including these, might it not perhaps at an early date think of the desirability of altering its title to that of the Chemical Society of Liverpool? With such a title he felt sure the association would draw into its ranks members from the greatest seats of chemical industry in the whole world in the neighbouring towns.

Mr. Tannor proposed "The Pharmaceutical Society of Great Britain." He was convinced that the public would sooner or later recognise the superior claims of those who possessed its qualifications, and instances were frequently occurring in support

of that statement. The Pharmaceutical Society had done much for chemists and druggists, and he doubted not would do much more. The toast was coupled with the name of a well-known and appreciated member of its council, Mr. Shaw.

Mr. Shaw paid a glowing tribute to the virtues and glories of the Pharmaceutical Society, both in the past and now. He also adverted to the Benevolent Fund, in which all registered chemists, their widows and children, were interested, and stated that only about 12 per cent. of that body were subscribers to the charity, and that Liverpool had not been forgotten in the distribution of the fund.

Mr. J. A. Turner proposed "The Town and Trade of Liverpool" in a humorous and most effective speech, and coupled with the toast the name of Mr. John J. Evans, of Messrs. Evans, Sons & Co.

Mr. Evans expressed his great satisfaction in being present that evening. He briefly reviewed the trade of the port during the past year, and alluded to the decrease in the emigration returns, and hoped that the coming year would be an improvement on the last.

Mr. Sumner said the toast he was privileged to propose was "The Registered Chemists of Liverpool and its Suburbs." He was glad that last word was added, because it was highly necessary, inasmuch as Liverpool widely differed from some large towns, where it would seem as if the sun's rays were wholly focussed in their centre. In looking along the board that night he was struck with the thought that it would be well if their public analyst could see the representative respectability of the Liverpool district, for it gave to his mind a guarantee of the confidence which the public might repose in the faithful discharge of the duties confided to them as a body. They had heard of the carnage and horrors of war, and the most revolting of them all was felt to be associated with those camp followers who had been guilty of robbing the dead, the dying, and the wounded. Nature itself recoiled at the thought of such deeds, but if there were men who in dispensing a prescription would be guilty, for the sake of filthy lucre, of leaving out a potent and vital medicine, upon which the life or death of the patient might hang, they would have no hesitation in placing such an one in the same category with those demons of the battle-field. He did not think the articles published in some of the London newspapers would do either Sheffield, or the general body of dispensing chemists, any harm, for there did not appear to have been any doubt as to their qualifications, and as to the comments which the London paper made that everything should centre in the Apothecaries' Hall of London, this only proved how little the writers knew of what they wrote about. There was one feature the new association presented which would appear to be in keeping with the order of the day in which they lived, *i.e.* that the child should outgrow the parent—the Liverpool Chemists' Association, an association which for many years had stood first in the provinces, and for long had done good service for the Liverpool and kindred societies. One great feature in that association, however, was that it had always been self-supporting. But although they had been self-supporting in their home institution they had not failed to come under the strictures of Mr. Shaw in regard to the Benevolent Fund of the Pharmaceutical Society, and needed to note his remarks. He looked forward with hope that the two kindred bodies—the big child and the parent—would work well together, and from the talent which had manifested itself that night it was not too much to hope that again Liverpool would come forward at the head of the local associations. He coupled with the toast the names of Messrs. Hocken, Warhurst, Dickins, Parkinson, and Fingland, who all acknowledged the compliment.

The officers of the association were then toasted, and Mr. Shaw (the treasurer) mentioned that they now numbered 140 members.

"The Wholesale Trade of Liverpool" was then proposed, and Mr. John A. Rimes acknowledged the toast.

Mr. Woodcock proposed "The Chemists of Birkenhead and Vicinity," which was responded to by Messrs. Ball, Foulkes and Stewart.

During the evening Mr. Nesbit kindly presided at the piano, and some excellent songs were sung by Mr. Masou and Mr. Lunt.

NORWICH.

THE annual dinner of the Norwich Chemists' Association was held on January 20, at the Rampant Horse Hotel, the chair being filled by Mr. Henry Thompson. Among the company

present were Mr. O. Corder (president of the association), Dr. Beverley, Dr. Waddell, Messrs. F. Sutton, F.C.S. (local secretary to the British Pharmaceutical Society), D. Penrice, W. Woodhouse, F. J. Bailey, J. Cossey, W. Gardiner, T. Pitts, G. Barnard, C. Cubitt, W. Stebbing, J. E. Gross, Dr. Archbold, P. Baker, Tice, J. E. H. Watson, Mackley, J. Shepherd Smith, E. Hall (hon. sec.), T. F. Rackham, D. Whincop, Lincoln, Piper, Hughes, Codling, Vvall, Gooch, W. Saul, Perkins, Roberts, Fox, Burrell, C. J. E. Crosse, Hubbard, Bacon (2), Pinchen, A. and W. N. Cooper, Darken, &c. The vice-chairs were occupied by Mr. W. J. G. Butler (treasurer), and Mr. W. H. Symons, F.C.S., vice-president of the association.

After dinner the chairman gave the usual loyal toasts, prefacing them with some explanatory observations on his taking the chair at the request of the committee, Mr. Corder, the president of the association, having expressed a desire that some other person and not he should do so.—Mr. D. Penrice and Dr. Waddell having responded to the toast of "Army and Navy and Reserve Forces," Mr. F. Sutton gave "The Medical Profession," which, he said, was well represented on this occasion, if not in numbers, in quality. In some cities and towns of the kingdom complaints were made that members of the medical profession and the chemists did not get on well together, but in this city they could make no complaint of that kind, for the medical profession in Norwich were a very gentlemanly and kind-hearted set of men to deal with; and, recognising their position, they felt that if they were to have a well-balanced state of things they must be helpers of each other. He coupled with the toast the healths of Dr. Beverley and Dr. Waddell.

Dr. Beverley acknowledged the toast with the usual complimentary phrases.

Dr. Waddell was even more profuse in his compliments than his colleague had been. It was with the greatest possible pleasure he was present amongst the members of an association in which he had taken great interest since its establishment. Such an association, except in the large cities of the country, was almost unique, for he could not call to memory any town like Norwich where one had been started. Its formation marked another step in the march of progress. It was the thin edge of the wedge; in other words, it showed that a calling which until lately had been reputed as little more than a trade was about to take its stand among the professions, inasmuch as there had lately been introduced into it a great amount of intelligence and scientific knowledge.

Dr. Beverley then gave "The Pharmaceutical Society of Great Britain." As a student, he remembered Dr. Bentley, an active member of the Pharmaceutical Society, and teacher of the medical school in which he was a pupil, and who imbued him (Dr. Beverley) with a considerable liking for botany. Amongst them that evening was a member of the Council of the society and another gentleman who had acted as examiner, namely, Mr. Sutton and Mr. Corder. As citizens of Norwich they ought to be proud that Mr. Sutton was selected by the society to represent it at the Congress at St. Petersburg. He coupled with the toast the health of both these gentlemen.

Mr. Sutton, replying, said he thought in this part of the world they did not appear to appreciate as they ought the advantages of such a powerful society as the Pharmaceutical Society. For some years it had a struggle for existence, but in 1868 it received an impulse which had placed it in a very fine position indeed; and in fact, as far as its money and interests and scientific talent of the best character were concerned, it gave place to no other scientific body in the country. Besides its talented men, it published a weekly journal which was well managed and had become a source of considerable income to the society; and then there was one thing very dear to his heart every time he came across its influence, and that was its benevolent fund. At the Council meeting every month they had applications for grants from the fund, and they gave away large sums to persons in need connected with the business, and the society had been so free in its gifts that whether a man had been a subscriber or not, or merely hung upon the skirts of the society, it had not withheld assistance. He had, therefore, been pained by the fact that subscribers in Norwich might be counted on the fingers. It was true they had a large sum invested, something like 30,000*l.*, in Consols, and a good income, but still the claims were very large, and he should be glad to receive their names, if only for 2*s.* 6*d.* subscriptions. This sum would not be missed, and it would tend to make them a more cemented body than they were now.

Mr. Corder also responded. He gave some excellent advice

to students, reminding them that every night wasted meant two nights' hard study to make up time. If they studied not merely for the sake of passing the examinations, but from love for the thing, they would find pleasure in the study of materia medica, and in every branch of science.

Mr. Woodhouse gave "The President of the Norwich Chemists' Association," remarking that that gentleman was not only an accomplished chemist, but a most estimable man.

Mr. Corder acknowledged the toast.

Mr. J. E. H. Watson gave "The Vice-President, Mr. Symonds," who he said had been raised to his position through his ability and affability, and all the apprentices who had attended his classes could bear testimony to the benefit they had derived from his instruction.

Mr. Symonds, F.C.S., in responding, expressed the pleasure with which he had placed his services at the disposal of the association.

Mr. Corder proposed in complimentary terms "The Health of the Chairman," and Mr. Thompson replied.

Vice-chairman, secretary, committee, ladies, and press were also toasted before the meeting came to an end.

SHEFFIELD PHARMACEUTICAL AND CHEMICAL ASSOCIATION.

The Chemists and the Borough Analyst.

THE annual dinner of the Sheffield Pharmaceutical and Chemical Association was held at the Music Hall, Sheffield, on Wednesday, January 19. Mr. W. Jervis, President of the Association, occupied the chair, and the vice-chairs were filled by Mr. J. H. D. Jenkinson, secretary, and Mr. Ellinor. Nearly fifty members and friends were present. After the usual loyal toasts, Mr. E. Birks proposed "The Health of the President," which was supported by Councillor Dobb, and the president appropriately responded.

The secretary (Mr. Jenkinson) then read the following letter from Mr. A. H. Allen, borough analyst:—

January 18, 1876.

W. Jervis, Esq.

Dear Sir,—It is only to-day that I have heard of your election as President of the Sheffield Pharmaceutical and Chemical Association, and as I shall not have an opportunity of seeing you before to-morrow evening, and cannot possibly be present at the dinner, I think it desirable to offer a few words in explanation of my recent report as Borough Analyst. In the first place I wish it to be distinctly understood that I received the samples from the inspectors merely distinguished by numbers, and am still quite ignorant of the names of the vendors except in a few instances. It appears that the wording of my report is open to some misconception, and it is only fair to say that the care and accuracy of the principal dispensing chemists was never suspected, and I therefore requested the inspectors to visit the second-rate shops. As, however, such of the prescriptions as were stamped by the dispensers showed that they had been made up by well known pharmacists, I concluded that my instructions had not been carried out. The remark has been made that prosecutions should have preceded the issue of my report. When it is remembered that I am bound by the Act to report my results quarterly, that the authorities have no power to suppress the reports, that the Health Committee only meets once a fortnight, that the last batch of samples, including 12 prescriptions and 12 glycerines, was only received on December 11, while the only Health Committee meeting held after the completion of my analysis was on January 6, and the minutes were published as a matter of course by the papers on the following Monday, it is evident that there has been no opportunity of taking any proceedings. I greatly regret my inability to attend to-morrow evening and explain these matters in person, but I am advertised to deliver a public lecture at the Hull Royal Institution on that day, and of course cannot break such an engagement. I regret that my report should have caused so much misapprehension.

I am, dear sir, yours very truly.

ALFRED H. ALLEN.

Dr. J. C. Hall, who was warmly received, proposed "Success to the Sheffield Pharmaceutical and Chemical Association," and in doing so said he was exceedingly sorry that a friend of his, a very worthy and honourable man, should have attacked that society in the manner in which he had. He very much regretted that Mr. Allen was not present to listen to the remarks he was about to make behind his back, remarks which he should have been glad to have made before his face, and which related to the question which agitated the association. The formation of that association had drawn together a body of men actuated by one common feeling, by one common mind

and object, actuated by an honourable, upright desire to carry out the great calling in which they were engaged to the advantage of their fatherland, and in truthfulness to their fellow townsmen and to God. But he was sorry to say that there had been an attack made upon the Pharmaceutical Association, and as the oldest practising physician of the town he said there had been such an attack made upon them as was calculated to do them the greatest possible injury and the greatest possible harm. He did not, however, think that attack had been made designedly or unfairly, but he thought if the gentleman who wrote that report had lived to the age he (the speaker) had it would not have appeared in the form in which it had appeared. That report commenced by stating that it was out of anxiety that the test had been made. Now he should like to know by whom that anxiety was manifested. Was the anxiety manifested by the public? The public was a very large and important body, but he should dearly like to be shown one of the public by whom any anxiety was shown that that investigation should take place. Was that anxiety so manifest that the report should appear in the Sheffield and London papers simultaneously? He should indeed like to know through whose anxiety the report was trotted from one paper to another, and he should like to know why Dr. Griffiths, the medical officer of health, knew nothing about it, because that gentleman had told him that he knew nothing whatever about it. Why was that report written, and why did it appear in the Sheffield and London papers, to the degradation of the pharmacists of Sheffield, without one word of explanation? Whilst he imputed to the borough analyst nothing but the most honourable feelings, he must say that in the manner in which the prescriptions were got and the report issued he had made a great and grievous mistake. Old Marwood did not hang people unless they had committed a fault, and the pharmacists of Sheffield ought not to be condemned when they were faultless. He would ask those present, as rational men, as reasonable men, what earthly reason could there be for any chemist to cheat to the extent represented in the report, when the cheat, in the prescription of iodide of potassium, could only benefit himself to the extent of one penny. He would tell them what his experience was of the dispensing chemists of Sheffield. As a practising physician of twenty-five years' standing he could pledge his professional reputation that the principal chemists of this town were not capable of "scamping" a physician's prescription. It was a libel on the men, a libel on the trade, utterly and altogether false, and utterly and altogether impossible to imagine anything to the contrary. There was no town in the United Kingdom in which physicians' prescriptions were more ably, more honestly, or more efficiently dispensed than in Sheffield, and therefore he could say between his conscience and his God that from the bottom of his heart he would drink success to the Pharmaceutical and Chemical Association.

Dr. Hime, in supporting the toast, thought that the letter of Mr. Allen threw some light where there had previously been darkness. He knew of some of the circumstances connected with the sending out of the prescriptions, and he would like to tell them all he knew. Various classes of things had been analysed by Mr. Allen in turn, and in the ordinary routine of business it was suggested that the dispensing of medicine was a subject deserving serious attention. It was a matter second to none in importance, and it was considered necessary to look into it. Mr. Allen asked him (the speaker) to prepare some prescriptions, and he did so. Dr. Hall had criticised those prescriptions, and when the criticism came from a gentleman of so much experience, no doubt they would be all convinced that there could be only one opinion on the subject. The prescriptions were duly sent out. Mr. Allen had previously asked him if he could suggest a good place where they could be sent to. He replied that there was a certain class of persons to whom it would be quite unnecessary to send them. He mentioned some half-dozen of their names, saying to Mr. Allen, "You need not go to any of these men. It is the poorer class of chemists in the back part of the town who will compound the prescriptions wrongly if any men in Sheffield will." He did not know where Mr. Allen sent the prescriptions; he only knew of one person who had mentioned the matter at the Town Council meeting. That was as much as he knew of the matter. He thought there was no necessity for speaking about conspiracies and underhand attacks upon them and so forth. He was in ignorance of any attack whatever having been made upon them. So far as he understood the matter there had been analyses of

certain prescriptions made in the ordinary routine of business. In some cases they were found to be incorrectly made up, and then a report was made. Whether that was an attack or not upon the members of the Pharmaceutical Association they would be able to judge. He did not at all think it was an attack. When they came to calmly consider the matter he thought they would be of opinion that it was nothing of the kind, but was simply an attack made upon certain individuals who incorrectly compounded certain prescriptions. As to any subsequent events in the matter he was quite in ignorance. He had not seen Mr. Allen since, nor had he communicated with him by letter. The whole thing was done in the ordinary routine of business, and was no conspiracy at all.

Dr. Hall here interrupted the speaker, and said that he neither accused Mr. Allen, or Dr. Hime, or anyone else of a conspiracy, or anything approaching to it. He had simply stated what the effect of the report presented by Mr. Allen had been in the eye of the public.

The chairman ruled that Dr. Hall was out of order, and the latter gentleman having said that when a person stated that which was altogether incorrect, he had a perfect right to protest, sat down.

Dr. Hime, continuing, said that Dr. Hall had preceded him, and he had also succeeded him. He hoped they had all enjoyed Dr. Hall's remarks, and no doubt they would remain deeply impressed upon them for some time to come. In concluding, Dr. Hime said he sincerely trusted that the Pharmaceutical and Chemical Association would flourish in the future as it had done in the past.

Mr. Ward, who responded, stated that the members of the Pharmaceutical Society had great reason to complain of the borough analyst's report, which, he agreed with Dr. Hall, was most cruelly applied to the chemists of Sheffield. At their last meeting, a week ago, he took occasion to express some strong remarks. He spoke feelingly, because he happened to be one of those who were visited. His prescription had been most carefully prepared, and he was ready to submit it to any analysis that might be thought fit. He was certain it contained to the fullest extent the ingredients desired. If he understood Dr. Hime aright he had something to do with the instigation. (Cries of "No, no.") He begged pardon; he misunderstood Dr. Hime. There was a great difference between the milkmen and the chemists. The milkmen deliberately put the water in for the purpose of making a profit out of it; but they must remember that the chemists' drugs were liable to deterioration. He objected to this analysis being called a fair test. It was not a fair test. It did not take in the chemists as a body, as it ought to have done. He had already endeavoured to show them, and he still believed, that the whole thing was nothing less than a blunder. He had taken occasion to say that the first opportunity he had of conversation with Mr. Allen on the subject. The letter which had been read expressed very fairly what Mr. Allen had stated to himself. He (Mr. Ward) stated to Mr. Allen what he thought the chemists as a body considered he ought to have done. Mr. Allen said that he regretted the result of his report, promised to make it right, and gave him to understand that the whole thing would be revised, and that it would be put right with the public. At the same time the thing had gone too far. The stigma cast upon the chemists of Sheffield would never be wiped out of the memories of the present generation. Mr. Ward went on to refer to the publicity which the report had obtained, quoting from a Dublin paper in proof of his remarks, and afterwards resumed his seat amid applause.

"The Medical Profession" was proposed by Mr. Radley, and suitably responded to by Mr. W. R. Thomas. The other toasts included "The Honorary Members and Visitors," "The Vice-President and Council," "The Secretary," and "The Ladies."

* *

An exhibition of drugs, chemicals, and specialties was also held, and the council thankfully acknowledged the kindness of Messrs. Southall Brothers & Barclay for contribution of a beautiful collection of materia medica specimens, &c.; of Messrs. Hopkins & Williams for a collection of fine chemicals; Messrs. Hodgkinsons, Stead & Treacher for rare leaves, barks, &c.; Messrs. Barron, Harveys & Co. for fine drugs; Messrs. Evans, Son & Co. for fine samples of gums and specialties; and Messrs. S. Maw, Son & Thompson for a new portable galvanic apparatus, &c.



For particulars of Advertisements, Subscriptions, &c., please refer to the first page of Literary matter. An Index to the Advertisements contained in this issue will be found in the front portion of the Journal.

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Editorial Note

PRESCRIBING BY CHEMISTS AND DRUGGISTS.

A DECISION, the importance of which can hardly be over-rated, has recently been given by Baron Bramwell in the Court of Exchequer, on the subject of counter prescribing, as it is commonly called. The case is reported on another page, and the summing up of the learned judge has already occasioned some excitement in medical as well as in pharmaceutical circles. We imagine that no one was more surprised than the prosecutors at the extraordinary interpretation which the learned judge put upon the Apothecaries' Act. In very truth, he gave them exceeding abundantly more than they had ever dreamed of asking for.

We have already reported that a section of the medical practitioners have bestirred themselves of late to defend their calling from illegal interference on the part of unqualified persons, and for that purpose a so-called Defence Association was formed not long ago, the expressed objects of which were to attack its foes. Their programme, to a certain extent, was a very fair and reasonable one, and we are not inclined to assert that they have yet overstepped the limits which a consideration of public safety and the rights of legitimate trading should impose upon them. Neither do we think that they have any intention of carrying on a harassing warfare. But it is plain enough that Baron Bramwell has given them a weapon which either they or any cantankerous doctor in Great Britain may use with deadly effect against almost any chemist and druggist who happens to be obnoxious to them or him. It is all very well for the medical journals to recommend "that the power which this decision gives should be used with moderation," "that it would be unreasonable to interfere with a chemist who occasionally gives a draught for a headache or other trivial complaint," and so on, but we know from their own correspondence columns that there are practitioners all over the country with little to do themselves, but who grudge every sixpence which finds its way across the counter of the druggist. And there are others who have a sort of semi-conscientious horror of any one outside their sacred guild presuming to know an atom about drugs or diseases. The judgment just given will be a providence to such men, and we can hardly doubt that, fortified by it, some of these will imprudently rush in where their more wary fellows would hesitate to tread.

Besides, apart from actual prosecutions, it is quite bad enough to have the medical associations or medical journals assuming, as they do already, the right of being the arbiters of how far a chemist may go. One of the journals significantly heads its article, "A Death-blow to Counter-Practice." Another, which has not yet established its own right of existence, shouts over "The Downfall of the Prescribing Druggist." Another urges that such actions should be more fre-

quently brought, so that chemists might learn "to confine their offences to such as are of a more venial nature." These writers know better; they know how the Legislature would be likely to regard any inordinate claims for protection, and they know that their advantage is not likely to be permanent; they are wise, therefore, in their generation irrequiring moderation. But the evidence that lies on the surface of these war cries is that they know their customers and what will please them.

The particular case which extracted from the judge the remarks which have made our medical friends so jubilant was an exceptional one. Mr. Nottingham, the defendant, is, or at any rate was, a member of the Pharmaceutical Society, who did a large prescribing business in Shadwell. It is said that he has once previously been fined twenty pounds, though he paid the penalty before the case came into court. Since that attack, perhaps in consequence of it, Mr. Nottingham associated with himself a duly qualified practitioner, and he thought by that means he might unite the profession of apothecary with the trade of chemist and druggist safely. That he himself continued to prescribe for patients over the counter was not disputed; his name only was over the door of the shop, and the words "Surgeon, Accoucheur" on the fascia. He had not "visited," but the assistant had done so, and the prosecution believed that the latter was *bonâ fide* assistant to the chemist, not to the surgeon.

This was carrying the legal rights of a chemist and druggist to a dangerous extent, and we cannot be surprised that the Medical Defence Association thought it a fair case to bring before a jury. The questions, we should have thought, would have been, first, whether the alleged partnership was *bonâ fide*, and secondly, whether Mr. Nottingham had gone beyond the limits allowed by the Legislature to chemists and druggists when the Apothecaries' Act was framed. The 28th section of that Act, passed so long ago as 1815, provides:—

"That nothing in this Act contained shall extend or be construed to extend to prejudice or in any way to affect the trade or business of a chemist and druggist, in the buying, preparing, compounding, dispensing, and vending drugs, medicines, and medicinal compounds, wholesale and retail; but all persons using or exercising the said trade or business, or who shall or may hereafter use or exercise the same, shall and may use, exercise, and carry on the same trade or business in such manner, and as fully and amply, to all intents and purposes, as the same trade or business was used, exercised, or carried on by chemists and druggists before the passing of this Act."

This exemption was ably urged by the defendant's counsel, Mr. Rose. The words seem comprehensive enough, and we claim to be justified in the assertion that for sixty years both medical men and chemists and druggists have believed that they permitted to the latter a certain degree of right to advise in reference to the drugs or medicines offered for sale. According to the learned baron (assuming the correctness of the report of his summing up which has been published), the words used in that section have no reference to advice at all. Separating himself from the case in point entirely the judge asserted that a chemist who merely gives a draught for the headache thereby infringes the Apothecaries' Act. How would it be if it could be proved that previous to 1815 chemists and druggists were in the habit of giving draughts for headache?

Until now every man, woman, and child in this empire has been thought to possess the right to give advice to a neighbour on any conceivable subject. Are chemists and druggists to be henceforth excluded from the exercise of that right? This may be a *reductio ad absurdum*, and as such not worthy of regard as a serious argument. But let any one try to conceive the position of a chemist with the law existing as Baron Bramwell expounds it. A visitor enters his shop and says, "I have a headache: give me something to relieve me." The chemist may not say, "I will give you a draught and charge you sixpence

for it," but we presume he might say, in common with any other of his fellow creatures, "I would advise you to purchase 40 drops of compound aromatic spirit of ammonia, 20 drops of spirit of chloroform, 2 drachms of compound tincture of cardamoms, and 13 drachms of camphor mixture." Or we presume he might convey his advice in Latin, Greek, or Hebrew. In either case his customer would be equally astonished and disgusted.

It remains now to be seen how this judgment will be used. We have endeavoured to show how likely it is to be employed against our legitimate trade, and we close by remarking that in the event of the Apothecaries' Society or any other corporation or individual following it up in any persecuting spirit, it will be the bounden duty of the Pharmaceutical Council to defend our long-established position, at no matter what cost or risk, to the very utmost. At the same time it is only right to add that any case brought forward must be judged on its merits, and we should certainly not extend our sympathy to men who without special training extend their efforts beyond the fair limits of "counter-prescribing."

THE TITLE "DOCTOR."

A SMART discussion has recently taken place among the members and fellows of the London College of Physicians in respect to the assumption by them of the title "doctor" by courtesy. It has been vigorously maintained by many of them that as "doctor" in English means "physician," the converse must also be true, and that there could be no inaccuracy in using a title which in common parlance was universally given to them, and which, indeed, was only in accordance with the tenour of the English language. So a committee was appointed to consider the question under legal advice. They took two opinions, which exactly contradicted each other, therefore, basing their recommendation on some words used by the Chief Baron of the Court of Exchequer in a certain medical case, that "if a man was registered he might call himself what he pleased," this committee proposed that "no non-graduate fellow or member or licentiate of the College should append to his name the initial letters 'M.D.' or any letters indicating that he is a graduate of medicine of a university, unless he has obtained a degree in medicine from a university legally qualified to confer such medical degree; but that henceforth, in all official documents issued from the College, fellows and members might be addressed by the courtesy title of 'doctor.'"

This proposition came before the College a fortnight ago, when Dr. Paget at once tore its flimsy morality into rags. He said it would be as correct to call every officer in the army a colonel. What would a physician be "doctor" of? Doctor of Medicine, undoubtedly; implying, therefore, that he was a graduate of a university. The College was, in fact, asked to do what was equivocal, to do what it had no right to do, to confer on a man the title of "M.D." Dr. Risdon Bennett, Dr. Hare, Sir William Gull, Dr. Sibson, and Dr. Stewart, all opposed the proposal, which was at last unanimously negatived, a decision which we would call honourable to the College if it were not that after all it was merely a resolution to maintain the principles of common honesty.

PHARMACEUTICAL STATISTICS.

ACCORDING to the registrar's report recently published, there are ten fewer names on the register of chemists and druggists this year than last. The total number in England, Wales, and Scotland is now 13,276. Of course there is not nearly this number of chemists' shops in the land, as very many of those named on the registrar are associated with others, either as

partners or assistants. During the past year four persons passed the Modified Examination, and 37 the Minor. That number, therefore, may perhaps be taken as the normal annual figure for additions to the trade. If it should prove so it is quite evident that the number of persons legally qualified to conduct chemists' and druggists' businesses in Great Britain must rapidly dwindle, and at a much greater rate than the past year shows, to the manifest advantage of those that remain. During 1875 the registrar learned of 220 deaths, and erased 12 names at the request of the persons themselves. That many others have died, emigrated, failed, or left the trade for some cause or other, is fairly probable, although it may be remarked as a curious fact that the number of deaths given by the registrar for 1875 is already, in proportion to the whole number on the register, in excess of the somewhat heavy rate noted in Dr. Richardson's table, as printed and commented on by us last month. Calculating on the basis furnished by him, we find that not more than 207 out of the total should have died, whereas, as stated above, the actual number of deaths officially reported is 220. That the register so nearly reaches the total of last year is due to the fact that the admissions to its roll comprehend many who passed their examinations in 1874. Only 71 persons passed through the preliminary portal during 1875, and these of course are not qualified as chemists and druggists until they have taken the next step. So that, on the whole, it is not unreasonable to assume from the figures shown by 1875 that not more than one person enters the trade for every four vacancies. A section of pharmacutists, for whom Mr. Frazer is the spokesman in the Council, regards this fact as an alarming and dolorous one. That it will cause some apparent immediate inconvenience is obvious enough, but it seems to us that it can hardly fail to bring about an ultimate and a considerable advantage to the general body of chemists and druggists, whether proprietors or assistants.

FAITH COMETH BY "HERING."

INVESTORS in the Co-operative Bank, and others who find a lack of exercise just now for their inordinately developed faculty of faith, might practise on the morsel which follows, and which the *Homœopathic Review* quotes with all due solemnity from a journal of parallel persuasion in America. Dr. Carroll Dunham, who must be a physician of some note in the United States, for he has been selected to preside over the great International Homœopathic Convention to be held this summer in Philadelphia, was smitten with a severe cardiac rheumatism some few years since, which compelled him to relinquish practice, and was regarded as incurable by practitioners of both schools. Having thus duly consulted the astrologers, the magicians, and the soothsayers, Dr. Dunham turned at last to the homœopathic Daniel of Philadelphia, who happened to be Dr. Hering. One may be excused for wondering why the sufferer, a believer in homœopathic treatment, did not go to this eminent professor of that branch of medicine in the first place. But anyhow, he resorted to him at last. As if he was "talking for the press," the great authority said, "Call on me at five o'clock to-morrow morning." Dr. Dunham did so. "Do it again the second time," said the seer, and he did it again the second time. "Do it again the third time," was the order, and the docile patient did it again the third time. Then the oracle spoke and said that if *Lith. carb.* was not the remedy he did not know what was. The rest of the story we will not interfere with, except to explain to any reader who may not happen to be sufficiently "up" in trituration that the "third" would contain 1 part of the medicine with a million of sugar of milk. "The patient now returned to his home, and not being able to find the desired potency of the *lithium* he procured the third trituration, and attempted himself to triturate to a higher degree. The medicine

having been placed in the mortar with the requisite sugar of milk, he began the trituration. It was not long, however, before the exhalations from the triturating drug began to manifest themselves, and the patient succumbed to their influence, lying for some time in a semi-unconscious state. The recovery from this latter seeming complication was slow, but resulted in most complete recovery from his cardiac disease, without farther medical aid, thus illustrating the wonderful efficacy of the truly homœopathic remedy, and the care requisite to its selection."

THE SHEFFIELD PRESCRIPTIONS.

RESPECTING the alleged dispensing frauds at Sheffield on which we commented last month a few "last words" are before us. The *Lancet* believes

"As regards the great bulk of chemists, any imputation of inaccuracy in their work to be entirely unfounded. But in every calling there are plenty of unworthy followers. The wholesale adulteration of drugs is a familiar fact, and that there should be some retail dealers who allow similar principles to rule their daily practice is probable enough. There can, then, be no reason why the compounded medicines which chemists supply should be exempted from analytical tests of their correctness."

The same journal fails to see any

"Unfairness in the fact that the chemists whose medicines had been analysed were those 'far from the centre of the town, who were not often called upon to dispense prescriptions.'"

So do we; but we see a great deal of unfairness in first selecting such men for the experiment and then issuing a report which indicated that theirs was a fair sample of Sheffield or general dispensing. The *Medical Press* seems to consider the occasion a suitable one for the display of some small jocularity of the usual inaccurate character. It says:—

"The exposure has created an absolute uproar, not only in the pharmaceutical journals, but in the leading journals of the kingdom, in the latter of which a virtuous horror has been evoked which is rather amusing to those who are acquainted with the real state of the medicine trade. It seems to be new light to the newspapers that a prescribed medicine does not always contain either in quantity or quality what the medical adviser has ordered, and that medical men are not uncommonly obliged to be content with an approximation to the exact effect which their treatment is expected to attain."

We print elsewhere a report of a pharmaceutical dinner at Sheffield, at which the chairman read a letter from Mr. Allen "in explanation of his recent report as borough analyst." Mr. Allen greatly regretted his inability to be present at the dinner to explain those matters in person, a regret which we also share. Had he been there he would no doubt have informed one of the speakers where existed the "great anxiety" which occasioned the investigation; and how it happened that the report appeared in the Sheffield and London papers simultaneously? Perhaps, also, when he next "rises to explain" he will tell us more precisely why proceedings were not taken against the offending druggists. It was at first implied that this course was due to the free grace and magnanimity of the health committee; but Mr. Allen in his letter says, "it is evident there has been no opportunity of taking proceedings," in consequence of want of time. There may be another reason: we should like to know whether the person who had these mixtures made up informed the druggist that he intended to have them analysed, and then and there offered to divide each into three portions. If so it would certainly be curious if none of the twenty dispensers took advantage of the offer, and still more curious if some of those who had done so and who knew their results were correct had not ere this challenged the analyst's report.

The *British Medical Journal* says:—"We question whether this offence comes under the Sale of Food and Drugs Act, 1875. No doubt there has been a fraudulent admixture, but it is scarcely of the kind contemplated by the Act cited. The remedy is, we think, a civil one for non-delivery of goods contracted for. A druggist must be held to contract to supply medicines according to the requirements of the prescription, if he accept the task of dispensing a prescription. His failure is, therefore, a breach of duty, for which he is liable in a civil court. It is interesting to note that the supervision of druggists' shops, which was formerly a function of certain of the corporations, has now fallen into entire desuetude. It is satisfactory to find the public analysts taking up the task, and we hope that they will generally and vigorously pursue it."

INFANTS' PRESERVATIVE.

An inquiry into the death of Catherine Hannah Painter, a child aged six months, residing at 6 Carlisle Street, Lisson Grove, was held on the 9th inst. by Dr. Hardwicke. Kate Painter, mother of the deceased, said that up to within the last three weeks it was a fine healthy child, then it became ill, and had, as she was told, bronchitis. The child had some medicine, but as it did not get better she was induced by a bill she had given her to go to Mr. Gardener's, a chemist, in Church Street, and ask for a bottle of "Infants' Preservative," a patent medicine manufactured by Atkinson & Barker, of Stockport, near Manchester. On the paper with the bottle it stated she was to give two teaspoonfuls at a time. She gave the child this medicine altogether five times, but as it got worse she took it to Dr. Danford Thomas, in St. Mary's Terrace, who considered the infant had been poisoned. The child died the same afternoon (Thursday last). Mr. D. Thomas said the child was evidently under the influence of some narcotic. Its eyes were fixed, and the pupils strongly contracted to a point, and he was unable to arouse it. Dr. Anderson, analyst and officer of health, had examined the contents of the bottle, and found it to contain opium. The coroner said there was no doubt that death had been hastened by the medicine; and the deputy-coroner, Dr. Thomas, complained of the way vendors of these medicines were protected by the law. A duly-qualified practitioner who had administered such a drug would have been held responsible for the consequences. The jury found "that the deceased died from congestion of the lungs, accelerated by narcotic poisoning, the said narcotic being contained in a bottle of Atkinson & Barker's Infants' Preservative administered to it."

The young man on the *Daily Telegraph*, who has induced his innocent employers to believe that he knows all about pharmacy, and who has made such amusing exhibitions of his ignorance lately, has been "let out" at this case. According to him "there is free trade in England in drugs as in everything else," a statement which indicates that the writer has no notion of the Pharmacy Act. Then he goes on to patent medicines. Certain of these, he says, "deservedly enjoy the popularity which they have achieved." Those patent medicines which he stamps with his sublime approval are James's Powders, Dover's Powders, Battley's Solution of Opium, and Chlorodyne. These he believes are even "kept in stock at Apothecaries' Hall!"

It is irritating and unjust that the editor of a journal of undoubted influence should employ a man to write articles damaging to the trade who shows his rank ignorance of the subject on which he writes by confounding Dover's Powders and Battley's Solution of Opium with "patent medicines."

That the trade in patent medicines requires some regulation is, however, beyond all question. It is simply absurd that a law should exist which confines the sale of poisons to certain duly qualified persons, and demands from them the utmost precaution in connection with every transaction; and yet that the very same

Act of Parliament should permit any of these poisons to be sold by anybody, with or without a label, and surrounded, if it so please the proprietor, with all sorts of assurances of the perfect safety of his product, without the smallest let or hindrance.

CREMATION IN ITALY.

From Milan we have received a copy of the *Gazetta d'Italia*, containing particulars of the first case of cremation in Italy. It appears that the apparatus employed, invented by Professors Polli and Clericotti, is made in such a manner as neither to suggest any industrial procedure, nor to disturb the religious solemnity of the event. Neither a tube nor a valve is seen, and the urn is altogether isolated. The body is introduced by an opening in the side, without being seen by the mourner; the urn is then closed, and the cremation commences. The apparatus is kept cold from without, but an opening, closed with a piece of glass, displays the brilliant and eager flames, in the midst of which the form of the body is easily discovered. The spectacle, we are told, is truly new and striking. During the operation a clear flame encircled the inside of the urn. This flame, however, has no connection with the cremation of the body, but is a flame of ordinary gas. It is perhaps interesting to add that no bad odour was evolved from the operation, except the very slight perfume produced by the heating of the varnish which covered the entrance door. From preliminary experiments made in burning 140 lbs. of horse-flesh, even when the door of the urn has been left open, not the slightest odour could be detected. The aspiration, or "draught," towards the centre of the apparatus was so strong that on placing in the opening a burning brand it was violently attracted towards the centre. The combustible employed is the ordinary gas companies' gas, produced on this occasion by a special gasometer, and conducted into the urn by subterranean tubes. The body rests on a true bed of fire, on a grid-iron, so to speak, formed of tubes, from which project nearly 500 flames of gas mixed with air, other flames from above, directing their darts towards other portions of the body which—as, for example, the head—required more heat to ensure perfect cremation. The operation lasted an hour and a half, the ashes being left in the urn, after the gas had been put out, for twenty-four hours. Forty-two cubic metres of gas were consumed, and it is reckoned that each cremation costs in Italy from ten to twelve shillings. This is the first time a cremation has been held under the new conditions, and consequently a great number of spectators, both ladies and gentlemen, were attracted to the snow-covered cemetery of Milan. More than fifteen hundred people, it is said, "assisted" at the ceremony.

THE PARIS SCHOOL OF PHARMACY.

For some time past the bad state of the premises of the School of Pharmacy has occupied the attention of the Administration, and in the month of November last some of the walls sank at least two feet into the ground. The Administration thereupon decided to build another school—but where? If in the locality of the present one, they would be forced, in order to conveniently instal everyone in the new building, to purchase several adjoining houses, the appropriation of which would occupy much valuable time and interrupt the studies of the scholars. The new building ought to cover, with its out-houses and other dependencies, a superficies of at least 15,000 metres, and the most appropriate place would certainly be the grounds of the Luxembourg. 3,000,000 francs would cover the expense of building a new School of Pharmacy large enough for a personnel of 500 students, and containing a botanical garden of 5,000 metres. From late inquiries, it is understood that these suggestions will be acted upon.



AND

Literary Notes.

Food: its Adulterations and the Methods for their Detection. By Arthur Hill Hassall, M.D. London, 1876: Longmans, Green & Co.

THIS work is written after the model of Dr. Hassall's well-known book "Adulterations Detected in Food and Medicine," which was published about eighteen years ago. The interest that attaches to the subject of which it treats is constantly increasing in every direction. Not only are the public becoming more discriminating and exacting, but the dishonest trader has been driven to more cunning expedients for the accomplishment of his purposes; while the chemist must be prepared to satisfy the one and to outwit the other. It has now become a notorious fact that there are many chemists quite incapable of discharging this double duty. It would have taken a special creation to supply the demand for analytical chemists which has sprung up within the last few years, but as the time for that sort of thing has long gone by we must wait for the slow processes of nature to evolve the wished-for chemists out of the present chaotic void. The public have lost confidence in analytical chemists. The certificates so much used as advertisements are now regarded in much the same way as the testimonials which ornament the advertisements of miracle-working patent medicines; with the important difference that the latter, if genuine, are the gratuitous products of grateful persons, while the former are purchased at high and tempting prices. The wholesome diminution of public confidence will aid materially in the development of a race of analysts worthy of an exact science. At present the detection of adulteration in food is often entrusted to men who possess a knowledge of only one branch of science. The chemical analyst of the future will certainly require a more extensive knowledge of nature. He must be so far acquainted with the physical sciences as to be able to avail himself of physical laws and methods with some degree of intelligence. Surely the spectroscope, a purely physical apparatus, though chemical in most of its applications, deserves some mention in a work of this sort. The current notion that the spectroscope gives purely qualitative information has doubtless tended to restrict its application; but when the examination of solutions by the spark method becomes better known it will be found to give approximate quantitative results, which compare favourably with the rough information of this nature derived from the qualitative methods at present exclusively employed. However, there does not appear to be any prospect of the spectroscope eventually superseding the quantitative instruments of the modern laboratory. Another optical instrument of more extensive application in the detection of adulteration in articles of food is the microscope. This is Dr. Hassall's strong point; the prominence that he gives to microscopy is the peculiar merit of his work. The article on water and its impurities is excellent, and is quite in keeping with the great importance of the subject. In the examination of water chemists are fond of confining their attention exclusively to the chemical examination, while they neglect the use of the microscope, which gives, in a few minutes, information of the highest importance concerning the value of the water for drinking purposes. The numerous wood-cuts given in this article will be of great assistance to those who desire to identify the various organisms which exist in water contaminated with impurities of organic origin. The illustrations showing the fungi, algae, infusoria, &c., which formerly abounded in the water supplied by the city companies are quite startling, and certainly show the great necessity for employing the microscope in the examination of water. The chemical method devised by Frankland, as well as Wanklyn's excellent and expeditious method, are described, and their relative merits briefly but ably discussed. In the article on butter and its adulterations the author points out the great difficulties that beset the chemist in the examination of this article, and describes his method for determining the melting point of fats. He gives a series of tables of the melting points of butter and other fats, and also of mixtures containing given proportions of butter. The evidence afforded by the melting point, combined with that derived from a determination of the fatty acids, by such a

method as that described by Angell and Herner, and quoted by the author, must at present be regarded as the most trustworthy test of the purity of this important article of food. The chapters on various other articles of food, including tea, coffee, bread, wines, alcoholic drinks, spices, condiments, &c., are equally good. We can strongly recommend the work to everybody at all interested in the subject, and no public analyst should be without it.

The Weight Calculator. By Henry Harben, Accountant, Sheffield, Author of the "Discount Guide." Second Edition. London: Lockwood.

MR. HARBEN'S tables, which are strongly bound in a volume of 600 pages, are no doubt the most perfect and the most complete for calculations of the kind for which they are intended. They comprehend the values of every weight, from a pound to a ton, at 1*l.* per cwt. to 3 guineas per cwt., and after a few minutes' examination the tables are used with the utmost rapidity. For example, it is required to know the value of 256 cwt. 3 qrs. 15 lbs. at 48*s.* 6*d.* per cwt. You refer to the page at 48*s.* 6*d.*, find 255 cwt. is 618*l.* 7*s.* 6*d.*, and that 1 cwt. 3 qrs. 15 lbs. is 4*l.* 11*s.* 4½*d.* The total is effected by mental calculation. If the rate should be 48*s.* 9*d.* it would be necessary to add to the foregoing the amount at 3*d.* per cwt. For invoice clerks this work offers a great saving of time and wearisome labour. The printing, a matter of considerable importance in a compilation entirely composed of figures, is all that could be desired for clearness and sharpness.

THE *Commercial Travellers' Review* has completed its two years' struggle by retiring mournfully from public life.

THE SET of chemical labels published by Messrs. Philip Harris & Co., Bull Ring, Birmingham, is very well got up; the type clear and distinct, and the labels themselves are of the most convenient size. The only thing we do not altogether like is the nomenclature; however, that is a matter of taste. We prefer potassium nitrate (KNO_3) to potassic nitrate (NO_2KO), simply because it is less theoretical, and the simplest mode of expression that can be adopted. These labels look very well if soaked in paraffin after they are stuck on the bottles. It is not generally known what an excellent plan this is for preserving the labels. It is only necessary to warm the bottle with the label attached until it is hot enough to melt paraffin, with which the label is then soaked, the excess being wiped off when the bottle cools a little. The paraffin resists the action of most chemical reagents, and the labels remain clean, and last a long time.

WE FIND we were in error in stating that the late Dr. Ruddock was in early life a stonemason. This statement is contradicted in the current number of the *Homœopathic World*, where an interesting sketch of the late doctor is given by one who shared "the vicissitudes, the joys and the sorrows of his career for more than thirty years." Besides various tracts and innumerable "articles," Dr. Ruddock was the author of ten distinct works on homœopathy, the titles of which and the sales they have reached are thus given in a recent article by Dr. Ludlam, of Chicago:—

"Stepping Stones," ninth edition	...	...	100,000
"Vade Mecum," seventh edition	...	...	38,000
"Clinical Directory," third edition	...	...	5,000
"Lady's Manual," sixth edition	...	...	26,000
"Common Diseases of Women," fifth edition	...	...	18,000
"Diseases of Infants and Children," second edition	...	...	7,000
"Common Diseases of Children," first edition	...	...	5,000
"Veterinary Manual of Homœopathy," second edition	...	...	10,000
"Consumption," second edition	...	...	10,000
"Text-Book," first edition	...	...	5,000

Total number of copies sold ... 224,000

In addition to his other activities, Dr. Ruddock had given much gratuitous service to the Wesleyan and Congregational bodies, and, indeed, he was specially educated for the ministry of the former sect, but preferred to serve his generation in a different capacity, so that his religious efforts might be entirely gratuitous.

AN American journal, entitled *New Remedies*, which has hitherto been published quarterly, and designed expressly for medical men, now appears monthly, and proposes to adapt itself more especially to the requirements of pharmacists. F. A. Castle, M.D., and Charles Rice, of New York College of Pharmacy, are the editors.

We have received the annual volume issued by the Smithsonian Institution of Washington, U.S. Among the interesting papers it contains we notice especially a translation of a remarkable article by M. de Candolle, of Geneva, "On a Dominant Language for Science." The author points out that it is only within quite modern times that the use of Latin as a common language for scientific treatises has been abandoned, and he goes on partly to prophesy and partly to advocate the general employment of English for a similar purpose. It appears that at present the total population of English-speaking peoples on the face of the earth reaches 77 millions. This calculation does not include any part of Asia or Africa. German is spoken by about 62 millions, and French by 40½ millions. Assuming that the increase of population in the respective nationalities will continue for a hundred years at the rate established during the present century, we may expect that in 1970 the English tongue will be the language of 860 millions, German will be spoken by 124 millions, and French by about 70 millions. But besides this he maintains that the English language is the most simple in construction, and the most concise in its power of expression. As a proof he declares that in families or societies where two languages are spoken with equal facility children will invariably choose English rather than French, or French rather than German. The fault of English lies in its irregular orthography and its indefinite pronunciation. The danger threatening the prospective predominance of English, M. de Candolle conceives to lie in the possibility of the language becoming split up into distinct tongues, just as Latin has spread into French, Italian, Spanish, and Portuguese. For this reason he urges all English-speaking nations to preserve the standard of their language, and he even suggests the formation of a committee representing the Anglo-Universities as an authority in all questionable variations. "Doubtless they would have the good sense to make as few innovations as possible; and thanks to common consent the advice would probably be followed. A few modifications in the orthography alone would render the English language more easy to strangers, and would contribute towards the maintenance of unity in pronunciation throughout Anglo-American countries."

MEDICAL OPINION ON COUNTER-PRESCRIBING.

IT is instructive to notice how the organs of the medical world regard the recent interpretation of the law by Baron Bramwell in the case of the Apothecaries' Society *v.* Nottingham. The *British Medical Journal*, under the ominous title "A Death-blow to Counter-Practice," observes:—"It is very satisfactory to know that prescribing, even 'across the counter,' by druggists is as illegal as it is mischievous. Ample provision is now made throughout the country by provident dispensaries and sick-clubs, and by the private practice of medical men of all classes, for the skilled attendance of disease, both in rich and poor. The 'prescribing druggist' has always been a mischievous pretender; he is now stamped as a legally punishable quack. The defendant in the case of the Apothecaries' Society *v.* Nottingham pleaded that 'he only gave advice in minor cases, and supplied the medicine;' but this did not avail him. It will be desirable that the power which this decision gives should be used with moderation, but it undoubtedly confers the facility of sweeping away the whole of the abuses of the wretched system of 'counter-prescribing.'"

The *Medical Press* is reasonable in its comments. "With respect to the public," it says, "we cannot be surprised that hundreds of the poorer classes ask the chemist to relieve their little ailments when we consider that a large number belonging to the more educated portion of the community are in the habit of doing the very same thing. Indeed, many appear to be under the impression that the druggist is well acquainted with the action and uses of the drugs which he sells, and that, in trivial cases, he is as well able to prescribe a suitable remedy as the

doctor himself. The profession has never adopted any well-concerted measures to put a check upon it, and by so many of its members keeping open shops and dispensing their own medicines it has laid itself open to the retort that if chemists now and then trespass upon the province of medical men, the latter interfere far more openly, and to a much greater extent, with the business and profits of the chemist. For various reasons it is doubtful whether the habit which chemists and medical men have of infringing upon each other's ground can ever be entirely got rid of, and the only thing the public and the legislature have to guard against is that the practice be so restricted that little or no harm can be done. As Baron Bramwell very justly observed, it would be unreasonable to bring an action against a chemist for giving a bottle of medicine to relieve his customer's headache. But when, as is often done, the chemist undertakes the whole treatment of a case, either alone or under the protection or cloak of a partnership with a medical man, or prescribes strong remedies for a complaint of which he knows nothing, or even visits a patient, the case is very different, and too strong measures cannot be taken to prevent such practices. For this reason we should like to hear that such actions as that on which we are now commenting were more frequently brought against a certain class of chemists than they really are, inasmuch as the occasional infliction of a penalty of 20*l.* would deter them from undertaking the duties of a regular practitioner, and confine their offences to such as are of a more venial nature, and such as the law cannot so well take cognisance of."

The same journal, we may remark, had told a correspondent a fortnight previously that no law exists to "prohibit any person from practising medicine so long as he does not pretend to be a duly qualified medical practitioner."

The *Medical Times* quite agrees "with Mr. Baron Bramwell, that it would be unreasonable to interfere with a chemist who occasionally gives a draught for a headache or other trivial complaint; but the present instance was not one of that character. The defendant, there is no doubt, did a large business of the class known as 'counter-prescribing;' and as such proceedings on the part of chemists and unskilled persons are a growing public evil, the Medical Defence Association are doing a public service in endeavouring to put a stop to the practice. The result of the case will show chemists and druggists that if they trespass beyond their legitimate province as dispensers and vendors of drugs they render themselves liable to a heavy penalty, and the expenses of a very costly prosecution."

The *Medical Examiner* entitles its remarks "The Downfall of the Prescribing Druggist," and remarks that "counter-prescribing of druggists is a practice not only injurious to the humbler classes of the community, but is also not without considerable effect in lowering the status and limiting the hard-earned gains of practitioners in poor districts. The legal business of druggists is to sell drugs and not to treat disease; but they have been doing the latter, with very little disguise, up to the present time. Of course the rights conferred by such a decision would press very hard upon the defendants, as a class, if they were at once enforced as a sweeping reform, but we trust that, proceeding at first leniently and always unremittently, the true line of demarcation will at length be drawn between medical men and druggists."

The *Lancet* has not commented on the case.

THE COMPOSITION OF PILULA HYDRARGYRI, B.P.*

BY HAROLD SENIER.

THE medicinal activity of blue pill having been attributed by some authorities to the amount of oxide of mercury rather than to the metallic mercury present, the author of this paper submitted several samples obtained from leading London manufacturers to chemical analysis, with the view of ascertaining their precise composition. Having first proved that the organic matter present did not interfere with the accuracy of the estimation of the mineral matter, the various samples were examined for—(a) mercuric oxide; (b) mercurous oxide; (c) metallic mercury; (d) ash; and (e) organic matter, together with whatever

* Abstract of a Paper read at an evening meeting of the Pharmaceutical Society of Great Britain, February 2, 1876.

amount of moisture might originally be united with the organic matter.

The following table represents the results obtained :—

Composition of Pilula Hydrargyri.

	Age.	Metallic Mercury.	Mercuric Oxide.	Mercurous Oxide.	Ash.	Organic Matter.
1	18 hours	32.49	nono	a trace	1.20	66.31
2	5 weeks	32.26	.09	.25	1.20	66.20
3	3 months	31.60	.24	.62	1.18	66.36
4	3 months	31.15	.44	1.60	1.12	65.39
5	6 months	32.44	.50	.80	1.70	64.56
6	14 months	29.86	.98	2.60	1.20	65.36
7	19 months	31.59	.50	2.50	1.00	64.41
8	2 years	28.40	1.80	4.22	2.10	63.48
9	?	30.23	1.06	3.24	1.05	64.42

No. 3 was the only hand-made mass, all the others having been made by machinery. The total amount of mercury present does not, in any one sample, vary much from the requirement of the Pharmacopœia, the proportion of mercurous oxide present exceeds the mercuric, and both increase with age and apparently with exposure. If, therefore, the action of pilula hydrargyri depends upon the proportion of oxides present, the age of the mass becomes a matter of primary importance, as it might be necessary to modify the dose according to the age. In any case it is clear that blue pill is a medicine liable to vary considerably in composition, and probably as much in medicinal activity.

Mr. Umney thought the manufacturers were to be congratulated on the great integrity which the analyses indicated, as it was clear the proper quantity of mercury was used in every case.

Professor Redwood thought that Mr. Senier's results indicated a very marked advantage possessed by blue pill over hydrargyrum cum cretâ, on which he had experimented fourteen or fifteen years ago, inasmuch as there was no evidence, from the present experiments, that oxidation in the pill took place to any material extent, or so much as to justify the conclusion that the action of the pill was dependent on the oxide. His experiments with grey powder showed that the extent of oxidation was very much greater than in any of the samples of blue pill tested by Mr. Senier. In some specimens the metallic mercury had fallen from 33 per cent. to 13, whilst there was 14 per cent. of mercuric oxide and between 11 and 12 of mercurous oxide. His object in making the investigation was to ascertain the cause of the griping and sickness which had been complained of in respect to the use of this preparation for children; he concluded that the great variation in the amount of oxide in different samples was mainly due to the method adopted in its manufacture, and he still thought so. He never found that any specimen prepared by a pharmacist with a pestle and mortar underwent any great amount of oxidation. But when it was made in a cylinder revolving by steam power on its axis, and containing a few round pebbles to aid the trituration, a greater amount of exposure to air, and a more complete trituration was effected which favoured oxidation. He had not been able to trace the change to the age of the product. With regard to the pill it was important to determine whether it was a question of age or machinery. It appeared that No. 3 had been made by manual labour, and No. 4 by machinery; both were of one age, and yet the latter had undergone about double the oxidation of the former. That would seem to justify the conclusion that the change was due to machinery. The opinion he had formed with reference to blue pill was that the mercury was in a condition of subdivision, in which it was probably coated with an oxide, principally the lowest oxide, or was in some state of oxidation perhaps even lower, because when microscopically examined the globules of mercury presented no metallic lustre. Still the mercury in blue pill was almost wholly in the metallic state, and the minute quantity of oxide which was present in most cases would hardly account for the efficacious action of a five-grain blue pill.

Professor Atfield thought that probably age as well as minuteness of division was a factor in this case. All the samples which had been made by machinery seemed to vary in their proportion of oxide according to their age.

Mr. Greenish said that Dr. Squibb had concluded that the

drastic qualities of hydrargyrum cum cretâ were due to the presence of oxide of mercury, and that the preparation should contain as far as possible only metallic mercury. When the mercury was rubbed up to a certain point, when it became invisible to the naked eye, it was in a proper condition for its full therapeutic action. Beyond that point it oxidised rapidly by exposure, and deteriorated in proportion to its oxidation.

SELTERS WATER.*

EVERY one has heard of Selters or Seltzer Water, as it is improperly called; but although upwards of two millions of bottles of it are annually exported, and more than double this number are manufactured in London, Paris, and New York, very few persons know anything of the spring itself or of the little village of Neider-Selters in Nassau, which gives its name to this world-famous water.

Two products have made the province of Nassau celebrated—its wines and its mineral waters.

Some of the former—for example, those from the vineyards of Rudesheim, Eberbach, Hochheim, Johannisberg, &c.—are the finest on the Rhine; and the latter, bursting from its numerous hills, are drunk as a luxury in every quarter of the globe, or prescribed as remedies for almost every disease that afflicts the human frame.

The waters of Ems are in great repute by dyspeptics; the jaded system is braced by the chalybeate springs of Langen-Schwabach, or the *stahlbrunnen* of Homberg, while the rheumatic or gouty patient believes that he derives benefit from the *koehbrunnen* or boiling spring of Wiesbaden.

The spring at Selters is rarely visited by travellers, but its waters are perhaps even better known than those of the more fashionable *kursaals* of Homberg and Ems. Leaving Wiesbaden, the capital of the Duchy of Nassau before it became a part of the General Confederation, and passing Schwabach and its *weinbrunnen*, a rough drive of twenty miles over a hilly country brings the visitor to the *brunnen* or spring of Neider-Selters—about a quarter of a mile from the little village of the same name, which has a population of about 1,000 persons.

The water is little drunk at the spring, except by the people of the village, so that the interest which attaches to the place lies in a visit to the establishment where this celebrated water is bottled for export to all the large cities of the globe.

Approaching the establishment, the visitor finds that it occupies a space of about eight acres, and is surrounded by a high stone wall. The spring itself is near the great gate of the enclosure, and is sheltered by a large circular shed, whose roof, covered with tiles, is supported by large posts, the sides being open, and the floor laid with thick planks.

Four beams, mortised together, form a frame 5 feet square, which surrounds the spring. Near this opening stands a sort of crane with three arms, and to each of these is suspended a wire basket capable of holding about seventy of the stone jugs or bottles in which the water is exported.

A basket being filled with bottles by peasant girls, by whom most of the work is performed, is let down into the spring, and the bottles, having been filled, are removed to a long table, while the crane is partly revolved and another basket is let down as before.

The bottles, after being filled, are corked with branded corks, and each of them capped with a metallic capsule. Formerly the corks were covered with white leather dipped in melted resin, and sealed with the seal of the Grand Duke of Nassau; but at present the metallic capsules bear the arms of the Prussian Government.

The brown stone bottles used for bottling are, previous to use, submitted to an inspection to ascertain whether they are cracked or porous.

For this purpose, the number of bottles required for the day's work are filled completely full and allowed to stand till the following morning, when, being visited by a government officer, those which show the slightest lowering of the water which they contain, are broken and thrown over the wall. The full,

* From the American Laboratory.

and consequently perfect ones are emptied; and, after being filled with the spring water, are securely corked and carried to the storehouse, where they are packed in large casks holding 100 bottles each.

The casks are then marked upon one end as follows:—

KÖNIGL. PREUSS. VERWALTUNG

SELTERSER

WASSER

Originalverpackung.

As we have already stated, this water is extensively imitated; the stone bottles, corks, seals, stamps, and stencils being so cleverly counterfeited that they can hardly be distinguished from the genuine. The casks in which the bottles of true Selters water are packed are bound by hoops of *haselnuss*, or hazel-wood, while those containing a factitious article are hooped with whatever wood is most convenient in the locality where it is produced, so that by examining these hoops we may often distinguish the genuine.

Many analyses of the Selters spring water have been published, but the following by Struve is perhaps the most complete. The quantities given are those contained in one wine gallon (231 cubic inches):—

Analysis of the Water from the Selters Spring.

Temperature = 15° C.

Total solid contents = 213.418 grs.

Total gaseous contents (CO₂) = 252 cubic inches.

Sodium—Na	71.921
Potassium—K	2.730
Calcium—Ca	6.640
Magnesium—Mg	2.987
Strontium—Sr	0.082
Barium—Ba	0.006
Lithium—Li	
Aluminium—Al	
Iron—Fe	traces
Manganese—Mn	0.005
Carbonic anhydride—CO ₂ (combined)	43.944
Chlorine—Cl	80.920
Fluorine—F	0.075
Sulphuric anhydride—SO ₂	1.656
Silicic anhydride—SiO ₂	2.287
Phosphoric anhydride—PO ₂	0.165

Total = 213.418

There are many formulas for the preparation of imitation Seltzer water, but they may be truly called imitations, for they are very far from accurate copies. In such formulas, all but the sodium, magnesium and calcium salts are omitted, and the carbonic acid gas is greatly in excess.

Whether the presence of minute quantities of various other bodies is of any real importance may be a question difficult to decide. Practically, they are never added, and to this extent the artificial waters do not represent the genuine. Indeed, the Government of Austria considers the manufacture of such waters a fraud, and forbids their sale.

One of the best of the many formulas for artificial Selters is the following:—

Sodium Chloride	100 grs.
Sodium Bicarbonate	85 ..
Magnesium Chloride (anhydrous)	18 ..
Calcium Chloride (anhydrous)	18 ..
Potassium Sulphate	4 ..

These salts to be dissolved in one gallon of water, and charged with carbonic acid gas at a pressure not exceeding 2 or 3 lbs. to the square inch.

As we have stated, about two millions of bottles of the genuine water are annually exported. What becomes of all the empty bottles is a question. Many of them are used a second time by the bottlers of artificial water, who buy them from the old bottle collectors. Too frequently, perhaps, the little brown jugs are used for the storage of much more stimulating fluids than the original Selters.

One useful purpose for these clay bottles may be here mentioned. They are excellent for holding hot water used for the promotion of artificial warmth in cases of sickness, their peculiar shape rendering them well adapted to this purpose.

THE BEST FORM OF BLISTERING LIQUID.*

By JAMES DEANE, F.L.S.

THE object of this paper was to ascertain whether acetic ether was equal or superior to a mixture of acetic acid and ether in its power as a solvent of the active principles of cantharides. This was tested by the following experiments:—

I. The author prepared 20 fl. ozs. of liq. epispasticus, B.P., the formula of which is —

Cantharides	8 oz.
Acetic acid	4 fl. oz.
Ether	a sufficiency.

The cantharides are moistened with the acid, and the ether passed through in a percolator till 20 fluid ozs. of liquor is obtained.

II. A liquor was prepared in the following manner—8 ozs. of cantharides were moistened with 4 fl. ozs. of acetic ether, allowed to stand in a closely covered vessel for about 12 hours, packed in a percolator, and acetic ether poured on till 20 fl. ozs. were obtained.

III. The third experiment was made by following the suggestion of Professor Tichborne, who has recommended the employment of glacial acetic acid instead of that of the ordinary strength. His directions were observed, except that the acid was mixed with an equal quantity of ether before moistening the cantharides.

The 2 fl. ozs. of these products, each representing 350 grs. of cantharides, yielded the following quantities of cantharidin:—B.P., 0.8; Tichborne, 1.8; acetic ether, 2.2, which is possibly a measure of their relative activity. The specific gravities of the three products were, respectively, 0.769, 0.898, and 0.782.

Mr. Brady has pointed out the objections to mixed fluids which do not dry evenly, but cause a concentration in one point; it appears, therefore, that we should select acetic ether, as it thoroughly exhausts the cantharides, has a pleasant odour, is free from the objection to the use of mixed fluids, and, further, may be used in the preparation of vesicating collodion, pyroxylin being readily soluble in it.

In reply to the Chairman, the author stated that medical men in Clapham had always found the acetic ether preparation efficient; his father had made it twenty years ago, and he believed Mr. Brady had made it for even a longer time.

Mr. Umney discarded the use of ordinary acetic acid shortly after Professor Tichborne published his paper on the subject. He found by experiment that the British Pharmacopœia liquor epispasticus, containing ordinary acetic acid, would produce a blister in about eleven or twelve hours, while that made by moistening the cantharides with glacial acetic acid and digesting for three or four days, and then percolating with ether, would produce a blister in four or five hours. Acetic ether would be an improvement upon the glacial acetic acid and ether, and ether was preferable to the use of ordinary acetic acid.

Mr. Gerrard said a continental chemist had proposed, in making blister-plaster, to moisten the powdered cantharides with weak potash solution, and after several days to make it slightly acid with hydrochloric acid, and thus liberate the cantharidin, which was the whole point in dealing with cantharides.

CHEMICAL SOCIETY.

Thursday, January 20, 1876.

PROFESSOR ODLING, F.R.S., Vice-President, in the chair.

After the ordinary business of the society, Dr. Armstrong exhibited a specimen of pure crystallised glycerine, from Messrs. Dunn & Co., of Stratford. Mr. E. Neison then communicated a "Note on Sebate of Cobalt," after which Dr. C. R. A. Wright gave an abstract of Part IV. of the researches by himself and Mr. G. H. Beckett "On Narcotine, Cotarnine, and Hydrocotarnine: on Dynarcotine, a New Opium Educt, and its Relationship to Narcotine and Narceine." The last paper was "On a Method for Estimating Bismuth Volumetrically," by Mr. M. M. P. Muir.

* Abstract of a Paper read at an evening meeting of the Pharmaceutical Society of Great Britain, February 2, 1876.

Thursday, February 3, 1876.

PROFESSOR ABEL, F.R.S., President, in the chair.

After the nomination and election of members, and the other ordinary business of the society, Mr. W. Ackroyd read a paper "On Metachromism, or Colour Changes," in which he discussed the phenomena presented by certain chemical compounds, which changed colour on being heated. Mr. W. H. Perkin, F.R.S., then made a communication "On the Formation of Anthrapurpurin," which, it appears, is the product of the action of caustic alkali on anthraquinone-disulphonic acid, the supposition that alizarin is formed under these circumstances being incorrect. There were also papers "On Maltose," by Mr. C. O. Sullivan; "On a Simple Form of Gas Regulator," by Mr. T. Fletcher; and "On High Melting Points, with special reference to those of Metallic Salts," by Mr. T. Carnelly, B.Sc. The meeting was finally adjourned until Thursday, February 17, when Professor Frankland will deliver a lecture "On Some Points in Connection with the Analysis of Waters."



VOX POPULI.

TO THE EDITOR OF "THE CHEMIST AND DRUGGIST."

SIR,—At the quarterly meeting of the Dewsbury and District Chemists' Association (which numbers over 30 members), held on the 20th inst., I was requested to ask you if you could define the benefits derived by the chemists and druggists of this country from the Pharmaceutical Society in return for the fees paid at the various examinations; the severe penalties to which they are exposed for unintentional violations of regulations, the existence of which is unknown to them; their responsibility for mistakes made by their assistants or apprentices; and the numerous annoying restrictions to which they are subjected (more, probably, than any other class of the community). Where are apprentices to come from if the examinations are made so severe that none but intelligent youths of the highest order can pass them; and they become aware that after all the study and expense, the society which compelled it cannot or will not protect them in the occupation for which they have worked so hard? while in all directions unprincipled charlatans, men of straw, unable to pay any penalties if convicted, are doing considerable business and pocketing the legitimate profits of the chemist, and in many cases of the medical profession also.

Does the society intend taking any steps in reference to the stigma cast on the trade by the Sheffield analyst? Is it to be borne that prescriptions shall be taken to shops where dispensing is almost unknown (the most respectable chemists not called upon), and if inaccuracies occur, or inferior drugs and chemicals are used, the entire body slandered, as if it was the rule and not the exception for such mistakes or dishonesty to occur? Can you inform the trade whether or not any steps are to be taken in reference to the various Mutual Supply Associations, which sell to members, &c., at about cost price, to the ruin of legitimate trade, and even send out circulars to medical men requesting them to use their influence in sending prescriptions to be dispensed at their stores, under the superintendence of a legally qualified man employed by them? Is not every individual member of these associations a partner in the profits, and as such is he not personally liable for selling drugs, poisons, &c., without having gone through the necessary examination and paid the ordinary fees, and will a single payment of the patent medicine license prevent prosecutions against the individual members as patent medicine vendors?

The chemists of the country, we think, desire to elevate their position, and would not object to any reasonable fees or Government regulations, but cannot consider it otherwise than most unfair that they should be fettered, as they are mulcted in heavy penalties—such as the Corn and Wart Solvent Case—and yet so

very, very little done to prevent their legitimate profits being taken continually by a host of others who have no claim to them.

Apologising for the length of this epistle, I beg to remain,

Yours respectfully,

J. R. ROBINSON,

Secretary to the Association.

Dewsbury: January 26, 1876.

[On one point, at any rate, mentioned in the foregoing letter, namely, the disgraceful lassitude evinced by the Pharmaceutical Council in regard to the dispensing carried on by co-operative societies, we are heartily in accord with our correspondent. In a recent number of the *Pharmaceutical Journal* the leading article was mainly an apology for the action of the Council in taking "proceedings against persons who carry on the business of chemist and druggist without being properly registered." The writer gallantly asserts that such action is "the duty" of the Council. If this theory, which, by the way, has been held by ordinary people for years past, is now an official opinion and not merely the private judgment of the editorial staff, we may perhaps hope in a year or two to see an attack on the arch-offenders, or if not that, at least an exposition of the reasons, if there are any, for what seems like a discreditable timidity. Large dispensing businesses are at this moment being conducted by Civil Service and other co-operative stores, the proprietors of which are not on the legal register, and neither the legal adviser of the Council nor any member of the Council has ever publicly stated why this apparently flagrant and open defiance of the law is permitted.—Ed. C. & D.]

TO THE EDITOR OF "THE CHEMIST AND DRUGGIST."

SIR,—Is the Pharmaceutical Society a curse or a blessing to the chemists at large? I unhesitatingly say a *curse*, and I believe I shall be borne out in my view by a large proportion of the country chemists.

What does it do for us? Why, it compels our assistants to pass an examination at an expenditure of time and money which many of them can ill afford, and which is getting more and more stringent yearly; and now I see they are trying to raise the fees. When a young man has passed is he any the better for it as regards actual business? Decidedly not: the assistants we used to get twenty years ago were far more useful, and if not so well up in theory were practically much more efficient.

And after a young man *has* passed and is allowed the privilege(?) of going into business on his own account, does he not find that the greener next door is selling many drugs and all patents and proprietary articles at the price at which he purchases them from the wholesale houses, and that he is obliged to eke out a miserable existence by dispensing the few prescriptions that he may chance to get?

Surely such a state of things ought not to exist, and I think it is high time that we try to upset the "dear old lady" that takes such care of us in our childhood, and turns us adrift on the world in our manhood, not caring whether we sink or swim.

If we are obliged to spend time and money in qualifying ourselves, surely we ought to be protected for our pains.

I have hastily penned these lines, hoping they may provoke discussion, and lead to something *practical* being done.

I am respectfully yours,

A COUNTRY MEMBER.

THE SALE OF POISONS.

TO THE EDITOR OF "THE CHEMIST AND DRUGGIST."

DEAR SIR,—In the present month's issue of *THE CHEMIST AND DRUGGIST* is the report of the case of the Pharmaceutical Society of Great Britain *v.* Teague, in which Mr. Flux, on behalf of the society, presses for judgment on the defendant for supplying poisons, not being a pharmaceutical chemist or a registered chemist and druggist, and he states that the sale of poisons was carefully considered by Parliamentary committees before legislation on the subject. I venture to observe that

many things were overlooked in this Poisons Act, and I should imagine that the legislators never intended to interfere with the sale of such preparations as sheep dippings, &c. That most of these preparations contain poison, and, further, that they are and have been sold for years by men out of the trade has been well known, and it seems an absurdity to prevent one man's selling a few packets of such an article when another may sell the same thing to the same person for the same purpose simply because he is registered as a chemist and druggist or writes M.P.S. after his name. I believe that the largest vendors of sheep dipping are not chemists and druggists. The danger is in the using of such preparations, not in the sale.

In what position does a farmer stand according to this wise enactment if he, having a machine, should offer to dip his neighbour's sheep, who, being without a machine, is disposed to pay the owner of the machine so much a head for dipping? Liable to the penalty, without doubt.

The sooner the Pharmaceutical Society get the Sale of Poisons Act altered the better for the chemist and druggist and for the public generally. Proper supervision of the sales of poisons may be of advantage, but the carrying out of the Act now is simply vexatious and ridiculous. If the society were not in the position to carry out the Act they were bringing in force they should have given further consideration to the subject. If the Government think the prohibition of the sales of poisons by persons outside the trade necessary they should appoint district inspectors, to trace out the infringers and to compel due observance of the law. The whole working of the Sale of Poisons Act has been absurd, and the sooner it is repealed the better.

Yours faithfully,
W. C. STONE.

166A Fore Street, Exeter: January 17, 1876.

[We sincerely hope our correspondent does not accurately represent the opinions of any large class. The trade has a fair share of legal restrictions surrounding it, and it is only reasonable that such microscopic benefit as the Pharmacy Act does confer should be assimilated. It is one of the chief duties of the Pharmaceutical Council to secure such benefits for the trade, and we would be the last to discourage the somewhat timorous authorities in their present faltering efforts to accomplish those things which are hoped of them.—ED. C. & D.]

PROPRIETARY ARTICLES.

TO THE EDITOR OF "THE CHEMIST AND DRUGGIST."

SIR,—Notwithstanding the fact that we exist at present under a Conservative Government, and that it is supposed that "to rest and be thankful" is the proper thing to do—at least one department of Her Majesty's service seems afflicted with a mania for "grandmotherly government," and one Act of Parliament evidently needs "a radical reform."

The department I allude to is the Board of Inland Revenue, which at present seems engaged in making a raid on chemists and druggists throughout the kingdom, sending emissaries all over England, trying to entice men into breaking the law, and then prosecuting them. The Act I allude to is the Patent Medicine Stamp Act, 52 Geo. III., c. 150, an Act which nobody (not even the big wigs at Somerset House) seems able to thoroughly understand, as you will see by the following correspondence:—

In September, 1874, I submitted my toothache, corn, and chilblain pencils to the authorities at Somerset House for their decision as to their liability to stamp duty. The corn and chilblain pencils were at once put aside, as not requiring a patent medicine stamp, and the toothache pencil was reserved for consideration.

On November 3 I received the intimation that the Board of Inland Revenue had decided that my "toothache pencil was not liable to stamp duty." Notwithstanding this decision, I have lately been exceedingly annoyed, both by strange men coming to my private house during my absence from home, and, by untruthful and illegal pretences, trying to entice my wife and children to sell, or let them have, pencils of various sorts, against my express injunctions. It has also come to my knowledge that Inland Revenue officers have interfered with the sale of

my pencils in various towns. I determined, if possible, to have a distinct understanding as to the real state of the law, and sent the following letter to Somerset House:—

36 Stanhope Street, Euston Road, January 22, 1876.

SIR,—In consequence of a recent prosecution at Manchester by the Board of Inland Revenue, the chemists all over the kingdom are thrown into a state of doubt and uncertainty as to what may or may not be sold without a patent medicine stamp.

Although it has been more than once decided that corn and wart pencils are not liable to stamp duty, yet I wish to have for myself official authority for making that statement.

I therefore beg respectfully to ask for your opinion with regard to the pneumatic corn pencil and pencil for chilblains, enclosed herewith. I claim no speciality for the contents of the tubes, but for the shape of the pencils, as a mode of conveying a liquid.

Yours respectfully,
JOHN J. HARVEY.

The Secretary of the Board of Inland Revenue.

In reply to the above I was informed that the Board had, after mature deliberation, determined that "not only *all pencils*, but all toothache tinctures, corn solvents, chilblain liniments, or similar preparations, under whatsoever names or titles, shall in future require to be stamped;" and I think it is no breach of confidence to say that I was shown a perfect museum of preparations—gathered from the four corners of the kingdom—for the purpose of prosecution.

Of course I have determined (now the law is declared) to abide by this decision and to put stamps on my pencils; but this decision opens up a very curious question, and one that will take some time and many prosecutions to define, viz., where the line is to be drawn, and what preparations do or do not require to be stamped. Trusting the importance of the subject will plead with you for space, I remain yours obediently,

JOHN J. HARVEY.

36 Stanhope Street, Euston Road, London.

TO THE EDITOR OF "THE CHEMIST AND DRUGGIST."

DEAR SIR,—Since the recent prosecutions in Manchester for the sale of "Corn Solvent" without a government stamp I have been inundated with letters from chemists in all parts of the kingdom, inquiring if my "Corn Solvent Pencils" and "Dental Syringes" are liable to stamp duty?

In order to have the question set at rest, on January 18 I waited upon the authorities at Somerset House, had an interview with the assistant secretary of the stamp department, and laid the case before him. He was inclined to look upon the dental syringe more in the light of an instrument than a medicament, but declined to take the responsibility of giving a decisive opinion in either case, and would submit the question to the Board of Inland Revenue for their consideration, and communicate the result to me. I have not yet received their answer, which shall be communicated to the trade at the earliest opportunity; in the meantime a promise was made that action would not be taken against the sellers of the articles pending the consideration of the Board.

Remaining, dear sir,
Yours faithfully,
B. ROBINSON.

Pendleton, Manchester: February 9, 1876.

A DISPENSING QUERY.

TO THE EDITOR OF "THE CHEMIST AND DRUGGIST."

DEAR SIR,—In your issue of last month "V. S." wishes to know whether one druggist was right in dispensing a prescription containing incompatibles, after having communicated with the writer, and having been desired to "dispense the same as written," or whether another druggist was right in neutralising the free acid in sp. æth. nit. mentioned in the prescription without communicating with the writer. The answer is obvious. The medical man either intended the prescription as he wrote it, or, on being applied to, he saw his mistake, and not wishing to admit it, desired the chemist to "dispense the same as written." On receiving this answer from the writer, what else

could the druggist do? If the second druggist was justified in dispensing the prescription with his own alterations, without consulting the writer, then any druggist is justified in making such alterations in any prescription as his knowledge or ignorance of dispensing may dictate.

Respectfully yours,
LEONARD DOBBIN.

Belfast: February 1, 1876.

TO THE EDITOR OF "THE CHEMIST AND DRUGGIST."

SIR,—With reference to the [above, which appeared in your last issue, I would direct attention to the following, which appears in Willson's "Chemical Notes:—

"Most commercial specimens of this spirit (Spiritus Ætheris Nitrosi) contain free nitrous acid (HNO_2); care should therefore be taken to neutralise it with carbonate of potassium previous to dispensing it with iodide of potassium, or the iodine will be set free, and the mixture ruined."

From which I conclude that the second chemist was quite justified in the course he adopted.

Yours, &c.,
G. B. K.

[The correspondent who put the query will hardly be relieved from his anxiety by the foregoing responses. Will some one give us a casting vote?—Ed. C. & D.]

THE SALE OF FOOD AND DRUGS ACT.

TO THE EDITOR OF "THE CHEMIST AND DRUGGIST."

SIR,—The same public analysts the value of whose qualifications have been shewn in your pages during the past three years have begun a new system of exhibiting themselves. They were formerly reported in such notorious cases as those of tea (in *Lambeth v. Mason*), citrate of magnesia (*Bermondsey v. McDermott*), and sweet spirits of nitre (*Westminster v. Fenton*). They now come forward as volunteers in print on their own account, and boldly attack the superior and ultimate authorities under the above Act of Parliament, by which Act they also hold their own appointments. It is somewhat novel, surely, to see the primary and subordinate officers attack in a weekly journal the superior officers appointed to carry out the same Act of Parliament. In a journal yeleft the *South London News*, Dr. John Muter arraigns the highest officials of the Analytical Department of the Excise, not merely as regards the case in which their evidence was preferred by the magistrate to that of himself and his two friends, but, travelling out of his way, Dr. Muter imports some other case, which is alleged to have occurred in Ireland. Now, sir, the whole of the constituent bodies united in the National Chamber of Trade were content while the measure was passing through Parliament to accept the appeal to Somerset House. Probably the chemists and druggists, as well as every other class of traders, will still prefer to rely upon the Government officers rather than upon the authors of the tea, citrate of magnesia, and spirits of nitre prosecutions.

I venture to suggest that when the eminent men at Somerset House are again attacked it might at least be prudent on the part of the so-called public analysts to do so with clean hands.

Yours faithfully,

FRED. MORRISON,

National Chamber of Trade, 446 Strand : Secretary.
February 10, 1876.

MARRIAGE AND LONGEVITY.—We read in the quarterly report of Dr. Robinson, medical officer of health for Dover, the following paragraph:—"The death-rate is 17 per 1,000; one old patriarch died at the ripe age of ninety-eight. This old gentleman illustrated the adage that married life is conducive to longevity, as he enjoyed the society of four wives, and became the father of twenty-eight children." This shows how loosely even a medical officer of health can draw conclusions. Five married persons are referred to in the foregoing sentence, four of whom can hardly have been illustrations of longevity. Or does the doctor think that the women don't count?



M. POIRIER, chemist to the Hôpital des Enfants, Rue de Sèvres, has just died, a victim to the cares he lavished on the inmates. Attacked by a diphtherial quinsy, caught recently in the rooms of this hospital, he died on January 30 last. Poirier was decorated with a military medal for his services during the Franco-German war, notably for the help, in the character of a volunteer, he gave towards the defence of Chateaudun.

DISINFECTANTS.—Replying to a correspondent who asks for the best disinfectant for a cesspool to destroy all danger from a recent case of scarlet fever, the editor of the *Sanitary Record* says—"Common copperas (sulphate of iron) is the most effectual disinfectant known for the purpose described by our correspondent. It should be used in saturated solution, and then some of the solid strewn over the surface. It is very cheap (about 7*l.* a ton), and very effective. It is too dirty for use as a domestic disinfectant, but very valuable for cesspools."

WATERPROOF TISSUES AND PAPER.—*Les Mondes* says that bichromate of potassa has the property of rendering glue and gelatin insoluble in water. Thus paper, and stuffs of cotton, linen, or silk, if once coated with this insoluble glue, become perfectly impervious. To render glue insoluble, it is sufficient to add to the water in which it is dissolved 1 part of bichromate to 50 parts of gelatin. The addition is only made at the moment when the liquid is to be used. The process is conducted in full daylight. The Japanese make their umbrellas with paper prepared in this manner.

HOW TO KEEP BISCUITS DRY.—Great minds sometimes condescend to small matters. At a recent meeting of the Glasgow Philosophic Society, after various inventions and apparatus had been described and discussed, Mr. Dickson took the field to explain "a simple means of keeping biscuits, &c., dry," which had been prepared by the late Mr. Walter Crum. He said that Mr. Crum appeared to have applied the property which unslaked lime possessed of absorbing moisture to the preservation of biscuits for his family use. The boxes which he constructed, and which were still in daily use, were about nine inches in diameter and about twelve inches deep, having a tray about an inch deep, filled with unslaked lime, resting on a ledge inside near the top, the whole covered with a close-fitting lid. With fresh lime and the boxes not opened for six months the biscuits had remained as dry as when first placed. If the boxes were opened daily, the lime retained its efficacy for from six weeks to two months.

A CASE which has created considerable interest among the Paris pharmaciens was lately tried before the Correctional Tribunal of Paris. It involved the question of the sale of secret remedies. A chemist had advertised the "Sirop Cabory" to the public as a purgative and depurative syrup, and one that would keep without fermentation. The prosecution asserted that this syrup was not in the Codex; the defence said that the formula was there. A doctor had ordered the syrup, but he was coupled with the chemist as defendant. The two accused lived in the same street, the former being Dr. Bourdoncle, aged 64, and the latter an old gentleman of 75 years, pharmacien and officer of health, with white hair, and a little deaf. The prosecution alleged that Martin, the chemist, was only a servant of the doctor, who himself was the real proprietor of the pharmacy. In any case Bourdoncle and Martin had a financial arrangement drawn up between themselves, somewhat as follows:—Bourdoncle received each month 400 francs (16*l.*) from Martin, and these 400 francs were the remuneration earned by the doctor for sending his patients to the Pharmacie Martin. In defence, M. Martin asserted that such an association as the prosecution described had never existed between Bourdoncle and himself. He also stated that what he had sold as "Sirop Cabory," though not in the Codex as such, was no other than the "Tisane Royale" of the Codex. Thus the defendants declared that theirs was no secret remedy; but the Court held otherwise, and condemned both Bourdoncle and Martin to a fine of 100 francs (4*l.*) each.

IT IS SAID that at the hospital of St. Bartholomew, London, there is consumed during a year about seven hundred gallons of cod liver oil, eight hundred pounds of castor oil, and twelve hundred pounds of Epsom salts.

METALLIC GALLIUM.—The new element, gallium, has recently been obtained in a pure metallic state by M. Lecoq. Its brilliancy places it between platinum and silver. It was obtained by treating electrolytically the aqueous solution of its ammoniacal sulphate, and the very coherent deposit formed was subsequently burnished.

DR. HOFFMANN, of New York, says that in the United States two-thirds of the total quantity of medicines consumed are dispensed in the form of nostrums, and that in a country boasting one medical practitioner to every 600 inhabitants. To explain this he suggests three alternatives:—First, that a large number of the nostrums really possess so much merit and have secured so much credit as to offer, in all ordinary cases, a satisfactory substitute for average medical skill, as it can be obtained at present; or, secondly, that this latter is largely regarded as so far inferior or disproportionate in price to the actual or fancied benefit derived from nostrums that experience and fact have secured for the “infallible” cure-all a greater confidence than is felt in the fallible doctor; or, thirdly, that the public, who annually spend so many millions of dollars more for nostrums than for doctors, must greatly lack in common sense and judgment.

Trade Notes.

MR. M. NEEDHAM, late of Kidsgrove, has succeeded to the business of Mr. Bostock, of Ashton-under-Lyne.

MR. W. FLETCHER has taken the business of Mr. M. L. Denbigh, of Blucher Street, Burnley. Mr. Fletcher had been assistant in the business.

WE HAVE received a neat and useful wholesale price list of toilet soaps, perfumery, &c., from the well-known firm of Whitaker & Grossmith, 120 Fore Street, City.

HOMŒOPATHIC ABSORBENT WAFERS.—These are small wafers supplied in sixpenny boxes, and prepared by Messrs. Conyngham & Co., of Dublin. Each one absorbs exactly a dose of a tincture, and as many homœopaths strongly prefer the tinctures to pilules or globules, in the belief that they are more reliable, these wafers will be found very popular, as they add considerably to the convenience of administration.

ADULTERATED QUININE.—Messrs. Howard & Sons report a letter received by them from a foreign merchant, who, though he had a high opinion of their quinine, found it too good for his market. He promised them large orders if they would put up expressly for him half-ounce vials containing 65 per cent. of quinine and 35 per cent. of magnesia, so that he might compete with a French product containing, he said, 40 per cent. of magnesia. We hardly suppose that Messrs. Howard had to wrestle long with the temptation, and it was unnecessary for them to remark that they sent their correspondent “a suitable reply.”

POSTAGE OF ORDER FORMS.—The distinction between letters and circulars seems to be a perennial source of difficulty or amusement (we are not quite sure which) to the postal authorities. Messrs. Allen & Hanbury have reported to us a recent decision communicated by the “Department” to a correspondent who submitted two order forms, one that of Messrs. Maw, and the other that of their own firm. The official reply sanctioned the halfpenny rate for the former, but declared the second liable to a penny stamp because it was worded thus:—“Please send by ———;” this form rendering it, according to official decision, a direct personal address.

A DECISION of much practical importance to creditors, has recently been pronounced by Sir James Bacon, the Chief Judge in English Bankruptcy. The substance and effect of that decision is this:—That where a liquidating debtor, trading again before he has obtained his discharge, subsequently files a second petition for liquidation, the proceeds of the second trading are divisible among the creditors under the first liquidation, and that the new creditors have no right to any dividend, unless they can prove that they had, previous to the transaction, given notice thereof to the trustee of the estate.

MESSRS. LOW, SON & HAYDON, the eminent perfumers, have hitherto carried on their business at two establishments in the Strand, Nos. 148 and 330. They have now greatly enlarged their premises at No. 330 (exactly opposite Somerset House), and will concentrate all their business at that address.

MR. J. J. HARVEY has asked the authorities at Somerset House to issue a smaller medicine stamp than that now supplied, suitable for such articles as toothache pencils, &c., but he has not yet had a reply.

BOWLER'S SHEPHERD'S COMPANION.—Chemists with a veterinary business would find, we imagine, a good sale for the compact case of sheep medicines of which an engraving is shown. It contains, in a strong and convenient wooden



box, a bottle of fever mixture, a bottle of scour or diarrhœa mixture, a bottle of lambing oil, a bottle of “ewe’s relief” or “shepherd’s friend,” a drenching bottle, and a pamphlet containing useful hints on the management and treatment of sheep. The whole affair sells for 7s. 6d. Further particulars will be found among our advertisements. A shepherd with these medicines at hand might often save the life of a sheep, which at the present price is a consideration to the public as well as to the farmer.

VASELINE AND COSMOLINE.—We have seen some samples of these interesting American products, respecting which abundant particulars are given in another part of this journal. They are supplied in this country by Messrs. Corbyn & Co., of 300 Holborn. We cannot say whether they are the exclusive agents.

THE DANGERS OF PETROLEUM.—Messrs. Randall Brothers, of Lime Street (proprietors of the “Astral Oil”) write to the *Daily Recorder* under the above heading. They maintain that there is no special danger with petroleum if proper care be taken in selecting the oil. Elaborate treatises might be written on the dangers of gas or the dangers of using sharp instruments, but a knowledge of the occasional abuse of these does not deter us from profiting by their legitimate uses. A man who would condemn the use of razors because he has cut himself through negligence, or because a razor is sometimes used to commit suicide, would be laughed at; but the sensational accounts which have lately appeared of the dangers of petroleum are equally absurd. Outside of gas, petroleum has become the principal artificial light-giving medium of our time.

But petroleum has often got into evil repute in consequence of the light and dangerous oils which are imported under its name, for the term petroleum covers a wide range, from the most volatile spirit, which will vanish into thin air at any ordinary temperature, down to the heaviest lubricating oil, which would almost require boiling before it would take fire. And many of these light oils have got into consumption, notwithstanding the requirement of the Government test. They find a market at a lower price than standard oil, and for the extra profit the unprincipled retailer runs the risk of evading the local inspector. What is required, and what the pending legislation which is promised on the subject should enact, is the absolute condemnation of all dangerous oils as soon as they are landed and before they leave the docks or warehouses to go into consumption. This has been found the most effective way to stop the importation of bad tea. Why, then, should not the same system be applied to petroleum? These dangerous oils are not allowed to be used at the place of their production, for the local laws of many of the United States are more stringent than our own on the matter, but Brother Jonathan sends them here because he finds a market for them, and for the rest, thinks we are quite capable of taking care of ourselves.

* *

MESSRS. EDWIN ELYDE & Co., truss and surgical instrument makers, of Sheffield, have recently bought the business of Messrs. Booth Brothers, manufacturers of brass enemas and general surgical brass turners. Messrs. Elyde & Co. will carry on this business in conjunction with their own.

* *

TOUGHENED GLASS.—We some time ago noticed in these columns an invention, patented by M. Royer de la Bastie, by which the brittle nature of glass could be so changed that such ordinary articles as lamp glasses, watch glasses, glass plates and dishes, &c., would bear much rough usage and throwing about without breaking, and the patentee hoped to be able to apply his invention to glass goods of all kinds. It would appear that the success which M. de la Bastie might have fairly anticipated has not run with him. Finding it difficult to induce glass manufacturers in this country to adopt his patent under a royalty, he commenced in France, in a small way, the production of the articles above-mentioned, but by some strange ill-fortune the premises he occupied were twice burnt down, and he is now fairly in the third attempt, expecting in two or three months to be in a position to supply not only the simple, flat-surfaced articles he at the outset experimented with, but the shaped appliances numbered by thousands in constant use in households and in divers trades. James Powell & Son, Temple Street, Whitefriars, last year essayed to work the invention, with, we understand, an unsatisfactory result, for the reason that the action of the boiled oil or grease bath was very uncertain, and where one piece was fully toughened, half a dozen others would be only partially so, while breakages, which in the case of ordinary glass caused but little loss, as the fragments could be remelted, resulted in the entire uselessness of the toughened specimens. The prices at which the firm could sell were, moreover, prohibitory of any extended trade, and we believe they have now relinquished any serious attempt to work the patent at all.

* *

WE MAY call attention to the proposal made in our advertisement columns by Mr. James Battle Austin, chemists' agent and valuer, to receive at his office samples of new preparations and appliances for introduction to the trade.

* *

HENRI'S PATENT CATTLE FEED.—We have seen some samples of the products supplied by the company trading at Hull with the above title, and we can bear testimony both to the high quality of the articles and to the good style in which they are sent out. The Patent Medicated Horse Feed is an article sold in packets, which all chemists might sell with advantage and credit, and druggists in agricultural localities will do well to accept the offers of agency made by the company through our advertisement pages, as their terms are liberal, and we have good reason to believe their manufactures to be of the first quality.



BARON BRAMWELL'S INTERPRETATION OF THE
APOTHECARIES' ACT.

On January 27 an action was brought by the Master, Wardens, and Society of the Art and Mystery of Apothecaries of the City of London against Mr. Nottingham, a chemist and druggist, of 223 High Street, Shadwell, to recover a penalty of 20*l.*, under the provisions of the Apothecaries' Act, 1815, for an alleged infringement of that Act by practising as an apothecary without having obtained the necessary certificate from the company. The defendant denied that he had infringed the provisions of the statute.

Mr. Lewis Glyn appeared for the Apothecaries' Company; Mr. Rose for the defendant.

This case raised a very important question as to the right of chemists and druggists to prescribe medicines over their counters in cases of illness—a practice which, it was admitted, is very general throughout the kingdom, especially in the poorer districts. The case on the part of the Apothecaries' Company was that the defendant, acting under the name of a qualified practitioner, had practised as a medical man without having the necessary legal qualification to do so.

Mr. Rose, on behalf of the defendant, submitted that under the 28th section chemists and druggists were specially excepted from the operation of the Act, and that there had been no acting or practising as an apothecary within the meaning of the 22nd section.

His Lordship, however, refused to stop the case on that ground.

Mr. Rose then addressed the jury for the defence, and contended that the mere fact of a chemist having given kindly and gratuitous advice to a poor woman with her bottle of medicine did not bring him within the operation of the Act.

The defendant, on being called, stated that in all serious cases the parties were attended by the regular practitioner who was in partnership with him, but he admitted that in minor cases he had inquired the nature of the illness and had given the medicine suited to it without the intervention of his partner.

His Lordship, in summing up, remarked that the Act was strict in its terms, and that, whether they liked it or not, the jury were bound by it. If a man entered a chemist's shop and asked for something to cure a bad headache, and the chemist gave him a draught, without doubt the chemist would technically infringe the terms of the Act, but it would be very unreasonable if the Apothecaries' Company were to interfere in such a case. In the present case it was for the jury to say whether or not the defendant had infringed the Act.

The jury returned a verdict for the plaintiffs.

His Lordship refused to give leave to move.

PYRETIC SALINE.

THE case of Lamplough v. Gibbons came before the Master of the Rolls on January 19. Mr. Dundas Gardiner moved for an injunction to restrain the defendant from continuing to use the name of "Pyretic Saline" or "Pyretic" to a composition manu-

factured and sold by him. The learned counsel said that the plaintiff was a chemist in Holborn, London, who manufactured and sold large quantities of an effervescing powder which he called "Lamplough's Pyretic Saline." The defendant, Thomas Gilks Gibbons, a chemist, of Market Street, Manchester, had recently commenced to prepare and sell, under the name of "Pyretic," a similar composition to the plaintiff's. The defendant, however, now submitted to a perpetual injunction, with costs.

Mr. H. Alex. Giffard said he appeared for the defendant, and consented to an injunction. The defendant had, in using the word "pyretic" in its scientific sense, acted in ignorance that it was already appropriated.

His Lordship made the order.

CORN SOLVENT LIABLE TO MEDICINE STAMP.

At the Manchester City Police Court, on Wednesday, Jan. 12, Henry Ross, manufacturing chemist, 50 York Street, Cheetham, was summoned at the instance of the Inland Revenue Department for selling a certain "medicine" without enclosing it in a proper and legal stamp, as required by law.

Mr. Tilsley, barrister, of London, prosecuted; and Mr. Cottingham defended.

Mr. Tilsley said that the proceedings were taken under the 52 George III., c. 150, which enacted that all unguents, salves, medicines, &c., "for the prevention, cure, or relief of any disorder or complaint incident to or in anywise affecting the human body," made or vended, which shall by any written or printed papers, handbills, &c., be held out or recommended to the public by the makers, vendors, or proprietors as nostrums or proprietary medicines, shall be furnished with a wrapper or label, provided by the Commissioners of Stamps, denoting the duty charged on such packet, box, or other enclosure. The defendant occupied a private house in York Street, and on his door was a plate bearing "H. Ross, operative chemist and manufacturer of Gustave Blanc's Parisian proprietary articles." On November 17, Mr. T. Reilly, supervisor of excise, bought at the defendant's house a packet of "Gustave Blanc's Parisian corn solvent," and paid the defendant 1s. for it. On November 19, Mr. Hoyton, excise officer, bought from the defendant a box containing twelve packets of the solvent. On these packets there was no stamp, as there ought to have been, the "solvent" coming within the meaning of the above section. With each packet was a handbill, which "set forth and recommended to the public" the solvent as being beneficial to the "prevention, cure, or relief of a distemper, malady, or ailment, disorder or complaint incident to the human body." This clearly showed that the "solvent" was liable to stamp duty, and also, on the defendant's own showing, for he announced himself as vendor of proprietary articles, which was sufficient to make him liable.

Mr. Cottingham said that Mr. Ross had not done this from any desire to evade payment of the stamp duty, but entirely from ignorance of the law. He had defended this information because he wanted to be assured of what he was bound to pay, and as to whether or no these articles were really and fairly chargeable. He would not pay the stamp duty or submit to a penalty without having a thorough investigation of the matter. What he was afraid of was of incurring a penalty which would be binding to him, but which would not prevent other dealers vending the "solvent," as they had done for years. He (Mr. Cottingham) further argued that the "solvent" did not come within the meaning of the Act.

Mr. Headlam said he thought it did.

Mr. Cottingham then addressed the Bench in mitigation of the penalty. He said that the Excise did not intend the defendant should be fined 10*l.* for each package. At that rate he would be liable to 120*l.* for the box bought by Hoyton, which would be simply absurd. He (Mr. Cottingham) thought that 10*l.* for the one article was the maximum penalty the Bench could inflict, as the selling of the box was one transaction, and one breach of the law.

Mr. Headlam said he should have to inflict the full penalty on every article, which would be 10*l.* on the one bottle, and 120*l.* on the box. He would, however, reduce it to one-fourth, which was as much as he could do. That would make 2*l.* 10*s.* for the single bottle and 30*l.* for the box, or 32*l.* 10*s.* in all. Had he possessed the power, he would have still further reduced, as he did not think the defendant intended to defraud the revenue.—*Manchester Guardian.*



BANKRUPT.

FALL, JOSEPH, Wool, Dorset, surgeon. Jan. 17.

LIQUIDATIONS.

(By arrangement or composition.)

Notices of first meetings have been issued *in re* the following estates. The dates are those of the petitions :—

BANNERMAN, CHARLES A., Market Square, Lytham, Lancashire, chemist. Jan. 13.

BRAND, HENRY, Nottingham Road, Ilkeston, chemist and grocer. Jan. 19.

BROWN, LEONARD F., Horbury, near Wakefield, Yorks, chemist. Jan. 12.

CARTER, MATTHEW, Newcastle, chemical manufacturer. Jan. 29.

DAY, GEORGE K., Monkroyd and Thwaite Gate, late Knottingley, and Monkroyd, all Yorks, manufacturing chemist. Jan. 27.

DUDGEON, CHARLES, Chew Magna, late Bristol, chemist. Jan. 20.

FARRER, ROBERT S., Western Road, Brighton, chemist. Jan. 29.

HUNTER, ANDREW G., Rockcliffe Hall, near Flint, and Frodsham Glue Works, Frodsham, chemical manufacturer. Jan. 22.

MARGETTS, GEORGE W., 2 Market Terrace, Upper Holloway, chemist. Jan. 24.

PURDUE, GEORGE, Pershore Street, Birmingham, druggist. Jan. 21.

ROPER, JOHN A., trading as J. A. Roper & Co., Radcliffe Street, and Royal Colonnade, Bristol, druggist. Feb. 4.

STAMPER, WILLIAM M., Soutergate, Ulverston, surgeon dentist. Jan. 22.

WILSON, GEORGE H., Oxtou Road, Birkenhead, physician. Feb. 2.

WRIGHTON, WILLIAM J., Newport Pagnell, veterinary surgeon. Jan. 7.

DIVIDENDS.

FENWICK, THOMAS W. (Bkt.), Stamford, Lincolnshire, chemist, composition of 1*s.* 6*d.*; F. W. Sperring, 26 Philpot Lane.

KEMP, GEORGE (Liq.), Sheffield, surgeon, 2nd div. 9*d.*; C. Corbridge, Norfolk Street, Sheffield.



[The following list has been compiled expressly for THE CHEMIST AND DRUGGIST by L. de Fontainemoreau & Co., Patent Agents, 4 South Street, Finsbury, London; 10 Rue de la Fidélité, Paris; and 53 Rue des Minimes, Brussels.]

Provisional Protection for six months has been granted for the following :—

4162. J. Townsend, of Glasgow, in the County of Lanark. Improvements in and connected with the manufacture of chromates. Dated December 2, 1875.

4348. H. Deacon, of Widnes, in the County of Lancaster. Improvements in the manufacture of sulphuric acid. Dated December 15, 1875.

4352. H. Grauel, of Magdeburg, in the Kingdom of Prussia. Improvements in stoppers for bottles. Dated December 15, 1875.

4358. W. Saul, of Preston, in the County of Lancaster. Improved tap or bottle cap. Dated December 16, 1875.

4391. M. Prentice, of Stowmarket, in the County of Suffolk. Improvements in apparatus for concentrating sulphuric acid, saline and other solutions. Dated December 18, 1875.

4422. T. A. Warrington and C. Harwood, both of the City of London. Improvements in apparatus or valves suitable for cleaning or filling bottles and for other purposes. Dated December 21, 1875.

Letters Patent have been issued for the following :—

2316. W. Riddell, of Stoke Newington. Improvements in apparatus for the manufacture of chloride of lime. Dated June 24, 1875.

2441. J. A. C. F. Glouet, of 2 Rue Ste. Appoline, Paris, France. A new or improved mode and means for the manufacture of bichromate of potash. Dated July 6, 1875.

2534. J. M. Plessner, of Golden Square, in the County of Middlesex. Improvements in cap or stopper mounts for perfume and liquid smelling bottles. Dated July 14, 1875.

2547. W. Catlow, of Birkenhead, in the County of Chester, and R. Hoyle, of Liverpool, in the County of Lancaster. Improvements in stoppers for bottles, and in modes of purifying and protecting the same, which modes of cleansing are also applicable to other similar articles. Dated July 15, 1875.

Specifications published during the month :—

Postage 1d. each extra.
1875.

1758. M. Prentice. Treating phosphates. 4d.

1839. J. Brennand. Colouring matter. 4d.

1864. W. Jones and J. Walsh. Manufacture of sulphates of soda and potash, &c. 8d.

1909. H. Deacon. Chlorine. 4d.

2003. H. Deacon. Manufacture of chlorine. 4d.

Obituary.

BROOKS.—Jan. 13, Mr. Charles Brooks, pharmaceutical chemist, of Wandsworth Road, Surrey. Aged 56 years.

BUTTER.—Jan. 7, Mr. Joseph Butter, pharmaceutical chemist, of Market Place, Kingston-on-Thames. Aged 28 years.

CLAY.—Jan. 7, Mr. Robert Clay, pharmaceutical chemist, of Liverpool. Aged 84 years.

CRITCHLEY.—Dec. 6, Mr. Thomas Critchley, chemist and druggist, Preston. Aged 39 years.

DAVIES.—Dec. 2, Mr. Charles Arnold Davies, chemist and druggist, of Devizes. Aged 26 years.

DUN.—Feb. 3, Mr. Robert Thomson Dun, chemist and druggist, of Argyle Street, Glasgow. Aged 31 years.

FELTHOUSE.—Jan. 3, Mr. Charles Felthouse, chemist and druggist, of Tamworth. Aged 43 years.

GAMBLE.—Jan. 9, Mr. Richard Gamble, pharmaceutical chemist, of Grantham. Aged 55 years.

GOODCHILD.—Nov. 29, Mr. Robert S. Goodchild, chemist and druggist, of Well Street, Hackney. Aged 32 years.

GREEN.—Jan. 11, Mr. Alfred Green, chemist and druggist, of Myton Gate, Hull. Aged 49 years.

HAROLD.—Jan. 26, Mr. William Harold, pharmaceutical chemist, of Battle, Sussex. Aged 70 years.

HART.—Dec. 16, Mr. Edward Hart, chemist and druggist, of Kegworth, Leicestershire. Aged 30 years.

MCCLEAN.—Jan. 21, Mr. John McClean, of Hyde, near Manchester, in his 54th year.

MUNRO.—Dec. 8, Mr. George Munro, chemist and druggist, of Lochee, Dundee. Aged 31 years.

PICKUP.—Jan. 10, Mr. Varey Pickup, chemist and druggist, of Bank Parade, Salford. Aged 53 years.

PORTER.—Dec. 1, Mr. Charles Porter, chemist and druggist, of Statham, Norfolk. Aged 67 years.

PROCTER.—Jan. 3, Mr. William Procter, pharmaceutical chemist, of Settle, Yorkshire. Aged 64 years.

ROBINSON.—Dec. 5, Mr. James Mould Robinson, pharmaceutical chemist, Beverley, Yorkshire. Aged 76 years.

SEATON.—Dec. 25, Mr. George Seaton, pharmaceutical chemist, of Chelmsford. Aged 51 years.

SLADE.—Jan. 31, Mr. John Wyke Slade, chemist and druggist, Llantrissant, and formerly of St. James, Barton, Bristol. Aged 76 years.

SLADE.—Feb. 5, at Llantrissant, Rachel Dorothea, the beloved wife of the late John Wyke Slade, chemist. Aged 74 years.

STEPHENS.—Nov. 20, Mr. John Stephens, chemist and druggist, Padstow, Cornwall. Aged 47 years.

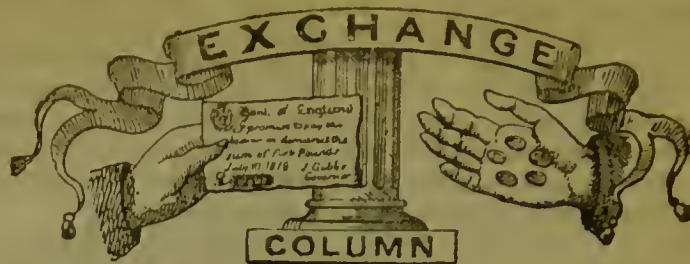
SWIRE.—Jan. 7, Mr. Roger Swire, pharmaceutical chemist, of 36 Edgware Road, W., where he had carried on business upwards of forty years. Aged 76 years.

TIMMS.—Dec. 31, Mr. Edwin Timms, chemist and druggist, of Worcester. Aged 46 years.

WILLIAMS.—Dec. 21, Mr. Hugh Williams, chemist and druggist, of Trefdrach, Anglesey. Aged 53 years.

WARRINGTON.—Dec. 6, Mr. William John Warrington, chemist and druggist, Manchester. Aged 56 years.

YOUNG.—Dec. 28, Mr. Thomas Young, chemist and druggist, of Ryde, Isle of Wight. Aged 58 years.



TERMS.—Announcements are inserted in this column at the rate of one halfpenny per word, on condition that name and address are added. Name and address to be paid for. Price in figures counts as one word.

If name and address are not included, one penny per word must be paid. A number will then be attached to the advertisement by the Publisher of THE CHEMIST AND DRUGGIST, and all correspondence relating to it must be addressed to the "Publisher of THE CHEMIST AND DRUGGIST, Colonial Buildings, Cannon Street, London, E.C.," the envelope to be endorsed also with the number. The publisher will transmit the correspondence to the advertiser, and with that his share in the transaction will cease.

FOR DISPOSAL.

An electric machine, five cells, nearly new; a few dozens of the original Burges 409, clean. 172/22.

Pill machine, one to cut 3 and 5 grain pills. State price. Feltwell, 91 Hammersmith Road, W.

Two plate-glass fronts from chemist's shop. Size and other particulars on application. Upton, Chemist, Wallingford.

Large copper still and steam evaporating basin. Cheap. D. H. G., 6 Abingdon Buildings, Bath.

Chlorate hydrate; about 75 lbs. Offers wanted. Handley High Street, Stoke Newington, N.

Shop lamp with bracket; pillar lamp. 8 Branksome Terrace, Acre Lane, Brixton.

A handsome revolving walnut stereoscope, with 100 slides, glass transparencies, paper ditto, &c.; cost 14l.; exchange drugs, patents, &c. Chemicus, 151 Hoxton Street, N.

Five 4s. 6d. Ford's Balsam Horehound, 14s.; $\frac{1}{4}$ doz. 2s. 9d. Daffy's Elixir, 5s. 6d.; other patents. Send for list. T. Hambridge, Midsomer Norton, Bath.

Camera, lens, chemicals, &c., to be disposed of, cheap. Amos Ramsbottom, 37 Rutland Street, Rusholme Road, Manchester.

Cheap, 25-oz. tin Howard's quinine. 7 lbs. best new Persian opium, 8 per cent. What offers? Pratt, Chemist, York.

American drinks machine, Dows, Clark, & Winkle; 8 taps; cost 50l.; a bargain. Chemicus, 151 Hoxton Street, N., London.

8 sacks canary seed; case cera Japan; 1 cwt. red galangal; 1 lb. bals. tolu; 2 cwt. block juice; 5-grain pill machine. Haywood, Chemist, Manchester.

Pharmaceutical Journal, 14 vols., 1841 to 1855, well bound; ditto, third series in numbers, a few missing, 1870 to 1875. Faraday's "Chemical Manipulations." R., Spalding, Lincolnshire.

A first-class phantasmagoria lantern, 3 $\frac{1}{2}$ wick, 150 slides, photographs, tales, comics, chromotropes, &c.; cost 20l.; exchange for patents and drugs. Chemicus, 151 Hoxton Street, London, N.

Tooth-brush case, Maw's fig. 52, 15s.; mahogany plate-glass counter case with shelf at top, 5 ft. long 18 in. wide 9 in. high, 3l.; brass shop scales, 20 in. mahogany box, as Maw's fig. 1, 20s. Feltwell, 91 Hammersmith Road, W.

Stomach pump with extra appliances, as fig. 29, Maw's book, quite new and complete, in mahogany box, 20s., worth 40s. Fownes' "Chemistry," ninth edition, 7s. 6d.; post free. Smith, Chemist, Crediton.

Two 11s. Clarke's Blood Mixture, 15s.; three 2s. 9s. Hall's Chlorate Potassa, 5s. 6d.; 47 numbers Pharmaceutical Journal for 1874-5, price 5s. 6d. Platten, jun., Fakenham, Norfolk.

A water bed, by first-rate maker, used only three weeks; to an immediate purchaser will be sold at half cost; price 5l. 5s. Apply to Mr. James East, Eden Street, Kingston-on-Thames.

Copper still, complete; powerful electric machine; two mahogany glass show cases, 6 ft. 6 by 1 ft., and 5 ft. 10 by 2 ft. 6; large mirror, 7 ft. 3 by 2 ft. Wilkinson & Co., Baker's Hill, Sheffield.

1 gross citrate magnesia bottles (blue) 6 oz., 8s.; 1 gross castor oil bottles (blue), 1 oz. to 8 oz., 8s.; 1 gross caper bottles (green), 2 oz. to 12 oz., 8s. "Chemist," 7 Eldon Grove, Rinford Street, C. on M., Manchester.

THE CHEMIST AND DRUGGIST for 1875; Attfield's "Chemistry," 4th edition; Squire's "Companion," 5th edition; Griffin's "Chemical Recreations," 8th edition. All clean and in good condition. What offers? Warwick, Chemist, Hartlepool.

A dispensing counter, made by Messrs. Treble & Sons, fitted with bottles and jars, pestle and mortar, measures, box, scales, labels, &c. Very little used. Cost 25 guineas. To be sold for 15 guineas. N. Y. Z., newsagent, Warwick Road, Kensington, W.

Sale or exchange for patents or new medical works—fittings from alterations, desk; one 24-in. specie jar; four ditto, 20 in.; good labols, some new; a few 2-lb. wide-mouth shop rounds, and 2-lb. blue syrups, very cheap. J. E., 22 London Road, Brighton.

Price 21s.—Royle's "Materia Medica," Fownes' "Chemistry," Waring's "Therapeutics," Fergusson's "Surgery," Squire's "Companion," Gregory's "Chemistry"; most useful lot; letters only. M. Percy, 24 Whitcomb Street, Leicester Square, W.C.

80 lbs. Penang isinglass chips, at 2s. 9d.; marble mortar and pestle, 12-in. diameter, 10s. 6d.; slab, 13 by 13, 3s. 6d.; round slab, 11 in. diameter, 2s.; flat plate-glass case, 3 ft. 2 by 2 ft., 25s.; lot window carboys, 2 to 4 gallons, cheap. James Floyd, Bury St. Edmunds.

Been used for Minor.—Manuscript notes on chemistry, botany, and Materia Medica, 4s. each, or 10s. 6d. the lot; minor examination questions, 2s. 6d.; illegible prescriptions, 2s.; collection of coloured illustrations of British plants, 2s. 6d. H. S. Marshall, care of Mr. W. H. Howard, Crowborough, Sussex.

Specie jar, 30 inches high, with glass cover, royal arms, magnesia, and mahogany stand, 70s.; cigar case, mahogany, with five glass slides, 16s. 6d.; piping machine, fixed on stand, 37s. 6d.; oil cistern, three 2 gal. compartments, with taps, 17s. 6d.—Lynch & Bateman, 68 Market Street, Manchester.

Apparatus for mechanical dentistry for disposal (have never been used) consisting of lathe, vulcaniser, press, and hot-water apparatus, 10 trays, 3 flasks, scrapers, cerryundum wheels, vulcanite, swivels, springs, wax for impressions, teeth, &c.; price 15l. W. Hill, 37 Upper Brook Street, Ipswich.

Offers wanted.—Sowerby's "English Botany," vols. 1, 2, and 9, Hogg's "History of the Microscope," Tate's "British Mollusks," all with coloured plates; Hardwicke's "Science Gossip," bound, 8 vols.; Hooker's "Student's Flora," all equal to new books, free to wholesale house. Horton, 171 High Holborn, London, W.C.

Pharmaceutical Journal from January 1875 to present date (clean); "The Dispenser's Vade Mecum," nearly new; Hamilton's "Cæsar's Commentaries," Latin—English, nearly new, cost 7s. 6d.; Cooke's "Manual of Botany," "Eton Latin Grammar," Lawson's "Physiology," and Stokes "On Memory," in good condition. What offers? Chemicus, Long Street, Dursley, Gloucestershire.

Homœopathic cases; cheap. 3 splendid walnut, 4 inches high, white wood fittings for 30 bottles, 5s. each; 6 mahogany, 4½ high, for 24 small, 3 large, book and plaister, best dark, 4s.; light wood, 3s. each; all to lock. Morocco flat leather cases with 12, 18, and 24 globule tubes; ditto empty, all velvet lined. Various flat and vertical pilule cases in first-class condition, clean and unused; half price or less. Offers? Turner, Chemist, Tettersdown, Bristol.

All carriage paid and in good condition—"Companion to Pharmacopœia," a late edition, 6s.; Gregory's "Organic Chemistry," 2s. 6d.; Garrod's "Materia Medica and Therapeutics," 4s.; Liebig's "Letters on Chemistry," 2s. 6d.; Watson's "Physic," 2 vols., 3rd edition, 7s. 6d.; Christison's "Dispensatory," 6s. (cost 18s.); Dr. Kane's "Chemistry," 1,204 pages and woodcuts, 6s. 6d.; Cooper's "Surgical Dictionary," 7th edition, 7s. 6d.; Churchill's "Midwifery," 4s.; THE CHEMIST AND DRUGGIST, several recent years' numbers, 21s.; Walshe's "Diseases of the Heart and Great Vessels," 3s. 6d.—letters only. M. Percy, 24 Whitcomb Street, Leicester Square, London, W.C.

Exchange for anything useful.—Handsome musical cabinet, Spanish mahogany, 5 ft. 6 high, 2 ft. wide, 19 inches front to back, tastefully got up in panels and bead-bordering, built in two parts rendering it very portable; plays 20 operatic and sacred selections, has five effective stops, including drum, all in perfect order (new metal pipes); cost 80l. Gregorian telescope, massive brass body, 28 in. long, 4½ in. diameter, with finder, and screw adjustment, by Short (mirror and reflector wanting). Massive brass telescope stand, on 3 folding legs, three movements, with rack work; cost 6l. (equal to new). Music stand (double), on iron telescopic pedestal, with thumb-screw. Schooner-rigged yacht, 3 ft. long, copper wire rigging, brass tiller, four sails, newly painted and varnished, gilt water line, handsome, and a capital sailer. Jabez Francis, Rochford, Essex.

40 doz. wide and narrow mouth shop rounds; 3 doz. black stock bottles; 19 specie jars, royal arms, &c.; 4 8-gallon carboys; 10 others, various; 24 glass jars, glass gold covers, elaborately labelled, 12 in., 8s. 6d.; handsome Spanish mahogany soda-water stand, marble top; plate-glass facia, 10 ft. 6 in. long by 15 in. wide, and 1½-in. mahogany frame; 4-ft. mahogany side counter, plate-glass front, shelves at back; 6-ft. dispensing screen, with cases at each end to open in front, looking-glass centre and marble slab—a bargain; plate-glass sponge case, as Maw's 92; 5 ft. by 6 ft. counter cases, as Maw's 105; one plate-glass, bevelled front, tooth-brush case (Treble's), nearly new, 30s.; circular front plate tooth-brush case, 31s. 6d.; 6 ft. long, 9 in. wide, 7 in. deep, oval plate-glass front, shelf at back, velvet lined counter case, second-hand, 70s; pair of brass scales, as Maw's 922; nest of 40 mahogany dore-tailed drawers; 3-ft. bent plate-glass case, 3 trays, shelf at back, in good condition, 55s.; 20 silvered plate glasses, various sizes, also 2 each in black bead frames, 70 by 36 and 60 by 30. Natali Brothers, 213 Old Street, City Road, London.

One 10½ ft. long, one 7½ ft. long, one 5 ft. 4 long, one 5 ft. long, and 3 smaller nests, mahogany, gold labelled and shop drawers and lockers under, with glass and black knobs; one 2 ft. 6 long mahogany upright show case and desk, as Maw's fig. 39; one 2 ft. 3 long, one 2 ft. 4 long mahogany upright show cases, as Maw's 39; 2 ft. 4 long mahogany enclosed desk; 23 bent and flat mahogany counter cases, from 1 foot to 8 feet long; 3 ft. 6 long mahogany plate glass sloping front case, similar to Treble's 109; bronzed ornamental plate glass stand, Treble's fig. 32; lacquered brass window fittings, with plate glass shelves; two mahogany window enclosures; one 14½ ft. long, one 12 ft. long mahogany chemist's counters, with label drawers; one 10 ft. long, one 9 ft. long, one 5 ft. 4 long, one 5 ft. long, one 4 ft. 4 long, one 3 ft. long mahogany wall cases; two mahogany cases to stand front of counter; four plate glass shop doors; two handsome specie jars, with royal arms, &c., 30 inches high; 1,500 second-hand shop bottles, with new gold labels, sizes from 4 oz. up to 60 oz.; 1 dozen patent oil bottles, with tin caps; 30 engraved acid bottles; 120 ½, 1, 1½, and 2 gallon upright and carboy shape black glass stock bottles, with japan and gilt caps and new gold labels; 180 second-hand white, lilac, blue, olive shop jars, with new gold labels, all sizes; Maw's 1 qt. tincture press; 40 second-hand composition mortars and pestles, sizes from No. 1 to No. 12; 25 iron mortars and pestles ditto, sizes from No. 1 to No. 18; Ashton's and Parson's Homœopathic 2 guinea counter case and contents. Lloyd Rayner, 333 Kingsland Road, London, N.

WANTED.

A dental chair, also liquid gas apparatus. 28/172

"Selecta e Prescriptis," second-hand, complete. G., 125 Hyde Road, Manchester.

Muter's "Chemistry." State price and condition to Bentley. Hanover Street, Sheffield.

"Homœopathic Pharmacopœia," state price. J. Proctor, 30 Westmoreland Street, Newcastle-on-Tyne.

Suppository mould and Squire's "Companion." Casely, Camden Road.

Second-hand sponge case in good condition. J. Isherwood, Chemist, Bromley, Kent.

Shop bottles, two large globes, soda water machine and bottles. Chemist, 34 High Street, Putney.

Two or three good sized specie jars. Particulars to "Alpha," 1 Sloane Square, London.

Squire's "Companion to the British Pharmacopœia," tenth edition. State price, &c., to J. Reeks, 2 Fyfield Road, Brixton.

Bent-glass show-case, figure 16 Maw's. Lowest price to "Chemist," 33 High East Street, Dorchester.

Muter's "Chemistry," Heath's "Surgery," Odling's "Chemistry," Aitken's "Outlines Medicine," Apparatus. Price, condition, Story, St. Ives.

A second-hand homœopathic case for counter; also to exchange *Pharmaceutical Journal* for THE CHEMIST AND DRUGGIST. Barnard, 76 Columbia Road, E.

The last edition of Valentin's "Inorganic Chemistry," also the *Lancet*, posted a few days after publication. Send price to J. Dove, Chemist, Sherburn, South Milford, Yorks.

Third edition of Ringer's "Therapeutics." State lowest price. Will give Toynbee's "On the Ear," in exchange. F. W. U., 55 King Henry's Walk N.

A pair of handsome gold-labelled specie jars, with stands; also two window brackets for carboys. State particulars and lowest price. No. 162/26.

Wanted, to purchase, a Dows & Clark second-hand soda-water machine. Must be cheap. Apply by letter, stating particulars, to "X," care of Messrs Straker & Sons, 124 Fenchurch Street.

Pharmaceutical Journal, posted Monday after publication, also mahogany case, as Maw's fig. 22, 100, or 101; must be in good condition; state size and price. Forbes, Chemist, Reigate.

[One of our correspondents is good enough to write as follows, at foot of his advertisement for Exchange Column, and we trust we are not stretching his courtesy too far in printing his testimonial.

"Mr. Horton will thank the editor of the *C. & D.* to insert the above in his next issue of the journal in the Exchange Column. He begs to bear testimony to the usefulness of such a mode of advertising, having satisfactorily disposed of all goods so advertised on more than one occasion, with one exception only.

171 High Holborn: Feb. 11, 1876."]



THE Queen's Speech gives no promise of any immediate commercial legislation, but it is hardly likely that the present session will be allowed to pass without some effort being made to introduce some new regulations into the procedure under bankruptcy. A commission sat for a good part of last year, under the chairmanship of Mr. Rupert Kettle, to investigate the working of the present laws, and their conclusions can hardly have been in all respects satisfactory. We presume their report has been laid before the Lord Chancellor, and will be forthcoming shortly. There were no less than 1,797 failures recorded in the United Kingdom during 1875, the total amount of liabilities reaching 30 millions.

Of the total number of persons and firms engaged in business it is computed that three per cent. failed in 1875. A petition to the House of Lords, with the signatures of the principal private and joint-stock banks and mercantile firms in London and the country, is, we believe, ready to be presented. The petition begins by saying, "That your petitioners, being extensively engaged in mercantile transactions, are interested in the Bankruptcy Laws, and it is their opinion that the bankruptcy

system is now as defective and expensive as it has been at any previous period." Under it "an insolvent debtor practically decides how his estate shall be wound up, and determines what composition he shall allow his creditors." Further, that the cost of proceedings in bankruptcy carries off 36 per cent. of the assets realised, and that the dividends coming to creditors have become less and less in every year since the Act of 1869 came into force.

The statements made in this petition are amply supported by figures, which show that the dividends paid by bankrupt and liquidated estates have gradually but alarmingly decreased in amount as the defaulters discover the readiness with which the law shelters their arrangements.

The petition to which we have referred suggests that the present demoralising plan of "liquidation by arrangement" be abolished, and in lieu of it that a debtor be only permitted to file a petition for leave to effect an arrangement with his creditors under stringent conditions as regards publicity and the extent of information relating to debts and assets to be contained in it; that the property of the debtor should vest officially in the Court of Bankruptcy under circumstances which would give the unsecured creditor ample opportunity and power to exercise real control over its realisation; that the debtor should appear before the court to be examined by or on behalf of any creditor; and lastly, that no majority of creditors should have power to compel any creditor to accept a composition of less than 5s. in the pound. These alterations would probably put an end to the existing state of things, under which, as a rule, the debtor, by the aid of expert liquidators and friendly, oftentimes fully secured, and sometimes fictitious creditors, gets released from his debts upon almost any terms he likes.

The export trade of the British empire for January shows a nearly equal total in value to the Jan. of 1875, the amounts being—for Jan., 1876, 16,654,512*l.*; for January, 1875, 16,986,760*l.* It should be remarked, however, that the sum falls short by nearly 3 millions of the declared value of the exports in January, 1874. Alkali and chemical products exhibit a marked falling off.

Trade has been extremely flat all through the month, and there is an unusual meagreness of events. Prices for English chemicals show scarcely any change, and transactions have been limited to absolute requirements. Pot and pearl ashes are cheaper, and soda products are generally easier. Iodine is dull, and can now be bought as low as 5*½d.*, a farthing lower than last month. Quicksilver seems to be firm at 1*1**l.*

Drug markets have been well supplied, and a fair share of business has been done. Barks have been bought freely at a trifling advance. Balsam of Copaiva remains the same price, but some thinner and poorer samples have been offered, which have sold at lower rates. Ergot of rye is very scarce and now commands extreme figures. A case was bought in at last sales at 4*s.* A slight reduction has occurred in opium, but it is not an indication of the market. The prospect is rather for a rise than a decline. Abundant supplies of castor oil have made the price lower than we have known it for similar quality for years past. Most of the roots and seeds are somewhat higher, except cardamoms, which, in consequence of abundant supplies, have declined. American and English oil of peppermint are both stronger.

In the oil market petroleum has failed to retain the firmness with which the year opened, large shipments having arrived and occasioned a decline. Linseed has also fallen, but closes firm at present quotations. Large buyers of olive oil may find the following information from a Naples circular of use. It is dated January 31, and says:—"The present position of our speculators for the decline is not very intelligible; during the past two months they have done their utmost to push down prices by selling at every pause in the demand, but thus far they have only succeeded in checking the advance which would otherwise have set in. Should they continue to sell regardless of the consequences to themselves later on it is quite possible that they may succeed in keeping down prices at about the same level for a short time longer, but if the present demand for shipment continues, as appears likely to be the case, owing to the exhaustion of stocks in other producing countries, the reaction appears to be simply a question of time, and any sudden turning on the part of our speculators would be likely to lead to a jump in prices. The weather has been latterly unseasonably mild, and an early spring would be considered unfavourable to our olive trees."

Monthly Price Current.

The prices quoted in the following list are those actually obtained in Mincing Lane for articles sold in bulk. Our Retail Subscribers must not expect to purchase at these market prices, but they may draw from them useful conclusions respecting the prices at which articles are offered by the Wholesale Firms.

CHEMICALS.		1876.		1875.	
ACIDS—		s. d.	s. d.	s. d.	s. d.
Acetic	per lb.	0 4 to	0 4½	0 4 to	0 0
Citric	"	2 10½	2 11	4 0 ..	0 0
Hydrochloric	per cwt.	5 0 ..	7 0	4 0 ..	7 0
Nitric	per lb.	0 5 ..	0 5½	0 5 ..	0 5½
Oxalic	"	0 5 ..	0 0	0 6½ ..	0 7
Sulphuric	"	0 0½ ..	0 1	0 0½ ..	0 1
Tartaric crystal ..	"	1 6 ..	0 0	1 7 ..	0 0
powdered ..	"	1 6 ..	1 6½	1 7 ..	0 0
ANTIMONY ore	per ton	280 0 ..	300 0	250 0 ..	270 0
crude ..	per cwt.	38 0 ..	0 0	40 0 ..	0 0
star	"	59 0 ..	0 0	52 0 ..	53 0
ARSENIC, lump	"	28 0 ..	0 0	25 0 ..	0 0
powdered ..	"	13 0 ..	13 3	14 6 ..	0 0
BRIMSTONE, rough ..	per ton	145 0 ..	0 0	150 0 ..	160 0
roll ..	per cwt.	10 0 ..	10 3	10 0 ..	0 0
flour	"	12 6 ..	14 0	11 6 ..	12 6
IODINE, dry	per oz.	0 5½ ..	0 6	0 8 ..	0 0
IVORY BLACK, dry ..	per cwt.	8 6 ..	0 0	8 6 ..	0 0
MAGNESIA, calcined ..	per lb.	1 6 ..	0 0	1 6 ..	0 0
MERCURY	per bottle	220 0 ..	0 0	430 0 ..	0 0
MINIUM, red	per cwt.	24 6 ..	25 0	24 6 ..	0 0
orange ..	"	37 0 ..	0 0	36 0 ..	0 0
PRECIPITATE, red ..	per lb.	4 9 ..	0 0	7 0 ..	0 0
white ..	"	4 8 ..	0 0	6 10 ..	8 0
PRUSSIAN BLUE ..	"	0 0 ..	0 0	0 0 ..	0 0
SALTS—		1876.		1875.	
Alum	per ton	145 0 ..	155 0	165 0 ..	175 0
powder	"	160 0 ..	167 6	185 0 ..	0 0
Ammonia :					
Carbonate	per lb.	0 5 ..	0 0	0 7 ..	0 7½
Hydrochlorate, crude,					
white	per ton	0 0 ..	0 0	640 0 ..	0 0
British (see Sal Am.)					
Sulphate	per ton	375 0 ..	380 0	355 0 ..	365 0
Argol, Cape	per cwt.	88 0 ..	92 0	90 0 ..	97 0
Red	"	71 0 ..	90 0	76 0 ..	90 0
Oporto, red ..	"	33 6 ..	34 0	33 0 ..	34 0
Sicily	"	60 0 ..	62 6	60 0 ..	62 0
Ashes (see Potash and Soda)					
Bleaching powd.	per cwt.	7 9 ..	0 0	10 0 ..	10 6
Borax, crude	"	32 0 ..	49 0	40 0 ..	55 0
British refined ..	"	53 0 ..	0 0	56 0 ..	0 0
Calomel	per lb.	4 3 ..	0 0	6 5 ..	0 0
Copper :					
Sulphate	per cwt.	24 3 ..	24 6	25 6 ..	26 0
Copperas, green ..	per ton	65 0 ..	70 0	65 0 ..	70 0
Corrosive Sublimate p. lb.		3 8 ..	0 0	5 7 ..	0 0
Cr. Tartar, French, p. cwt.		110 0 ..	0 0	114 0 ..	0 0
brown ..	"	90 0 ..	92 6	92 6 ..	98 0
Epsom Salts	per cwt.	5 3 ..	6 6	5 6 ..	6 6
Glauber Salts	"	4 6 ..	5 6	6 6 ..	7 0
Lime :					
Acetate, white, per cwt.		11 0 ..	20 0	13 0 ..	21 0
Magnesia : Carbonate ..		42 6 ..	45 0	42 6 ..	45 0
Potash :					
Bichromate	per lb.	0 4½ ..	0 5	0 6½ ..	0 0
Carbonate :					
Potashes, Canada, 1st					
sort	per cwt.	27 6 ..	0 0	35 6 ..	0 0
Pearlshades, Canada, 1st					
sort	per cwt.	30 0 ..	0 0	37 6 ..	0 0
Chlorate	per lb.	0 9½ ..	0 0	0 10 ..	0 0
Prussiate	"	1 0½ ..	0 0	1 2 ..	1 3
red	"	3 2 ..	3 3	3 2 ..	3 3
Tartrate (see Argol and Cream of Tartar)					
Potassium :					
Chloride	per cwt.	7 0 ..	0 0	7 0 ..	0 0
Iodide	per lb.	8 0 ..	8 3	9 6 ..	9 8
Quinine :					
Sulphate, British, in					
bottles	per oz.	6 6 ..	6 9	6 6 ..	0 0
Sulphate, French ..	"	6 2 ..	0 0	6 5 ..	0 0
Sal Acetos	per lb.	0 8 ..	0 8½	0 9½ ..	0 10
Sal Ammoniac, Brit. cwt.		44 0 ..	45 0	44 0 ..	45 0
Saltpetre :					
Bengal, 6 per cent. or					
under	per cwt.	18 6 ..	19 0	20 6 ..	21 3
Bengal, over 6 per cent.					
per cwt.		17 9 ..	18 3	19 0 ..	20 3
British, refined ..	"	22 0 ..	23 6	24 9 ..	25 9
Soda : Bicarbonate, p. cwt.		11 0 ..	0 0	13 0 ..	13 3
Carbonate :					
Soda Ash ..	per deg.	0 17 ..	0 0	0 2½ ..	0 0
Soda Crystals per ton		82 6 ..	0 0	92 6 ..	0 0
Hyposulphite, per cwt.		0 0 ..	0 0	0 0 ..	0 0
Nitrate	per cwt.	11 6 ..	0 0	13 0 ..	0 0
SUGAR OF LEAD, White cwt.		40 0 ..	0 0	42 0 ..	44 0
SUGAR OF LEAD, Brown, cwt.		27 0 ..	0 0	38 0 ..	39 0
SULPHUR (see Brimstone)					

		1876.		1875.	
		s. d.	s. d.	s. d.	s. d.
VERDIGRIS	per lb.	1 1 to	1 5	1 1 to	1 5
VERMILION, English ..	"	3 2 ..	0 0	6 0 ..	0 0
China ..	"	4 0 ..	0 0	5 6 ..	5 7
DRUGS.					
ALOES, Hepatic	per cwt.	60 0 ..	160 0	60 0 ..	180 0
Socotrine ..	"	65 0 ..	205 0	100 0 ..	200 0
Cape, good ..	"	36 0 ..	39 0	36 0 ..	89 0
Inferior	"	20 0 ..	35 0	29 0 ..	35 0
Barbadoes ..	"	40 0 ..	210 0	40 0 ..	185 0
AMBERGRIS, grey	oz.	55 0 ..	60 0	50 0 ..	60 0
BALSAM—					
Canada	per lb.	1 6 ..	0 0	1 10 ..	2 0
Capivi	"	2 4 ..	2 6	2 9 ..	3 0
Peru	"	5 0 ..	5 4	6 0 ..	7 0
Tolu	"	7 0 ..	8 0	6 0 ..	5 0
BARKS—					
Canella alba	per cwt.	0 0 ..	0 0	16 0 ..	27 0
Cascarilla	"	24 0 ..	26 0	20 0 ..	28 0
Peru, crown & grey per lb.		1 4 ..	3 4	0 11 ..	2 5
Calisaya, flat ..	"	2 6 ..	4 6	2 6 ..	3 6
quill ..	"	2 6 ..	4 6	2 0 ..	4 0
Carthagenia ..	"	1 2 ..	2 2	0 6 ..	1 11
E. I.	"	1 4 ..	4 6	1 0 ..	4 6
Pitayo	"	0 6 ..	1 9	0 4 ..	2 0
Red	"	1 4 ..	4 6	1 0 ..	4 6
Buchu Leaves	"	0 1 ..	1 1	0 2 ..	1 0
CAMPHOR, China	per cwt.	69 0 ..	0 0	75 0 ..	0 0
Japan ..	"	72 6 ..	0 0	77 6 ..	0 0
Refin. Eng. per lb.		1 1 ..	0 0	1 1½ ..	0 0
CANTHARIDES	"	3 6 ..	5 0	3 0 ..	5 0
CHAMOMILE FLOWERS p. cwt.		35 0 ..	60 0	35 0 ..	50 0
CASTOREUM	per lb.	6 0 ..	26 0	6 0 ..	24 0
DRAGON'S BLOOD, lp. p. cwt.		110 0 ..	200 0	80 0 ..	220 0
FRUITS AND SEEDS (see also Seeds and Spices).					
Anise, China Star per cwt.		102 6 ..	105 0	110 0 ..	0 0
Spanish, &c. ..	"	28 0 ..	48 0	15 0 ..	28 0
Beans, Tonquin	per lb.	1 6 ..	4 6	2 0 ..	3 0
Cardamoms, Malabar					
good	"	4 0 ..	5 0	4 11 ..	5 6
inferior	"	1 0 ..	3 9	2 0 ..	4 10
Madras	"	1 10 ..	3 6	2 9 ..	4 0
Ceylon	"	5 5 ..	5 8	5 6 ..	5 8
Cassia Fistula	per cwt.	8 0 ..	14 6	12 6 ..	15 0
Castor Seeds	"	5 0 ..	10 6	7 0 ..	11 6
Cocculus Indicus ..	"	13 0 ..	16 0	14 0 ..	16 0
Colocynth, apple ..	per lb.	0 6 ..	0 11	0 11 ..	1 0
Croton Seeds	per cwt.	44 0 ..	45 0	44 0 ..	0 0
Cubebs	"	30 0 ..	0 0	21 6 ..	23 0
Cumin	"	19 0 ..	24 0	15 0 ..	20 0
Dividivi	"	12 0 ..	16 0	11 0 ..	15 0
Fenugreek	"	18 0 ..	22 0	8 0 ..	16 0
Guinea Grains ..	"	21 0 ..	0 0	25 0 ..	0 0
Juniper Berries ..	"	7 0 ..	10 0	9 0 ..	10 6
Nux Vomica	"	7 0 ..	12 6	9 0 ..	14 0
Tamarinds, East India, ..	"	13 0 ..	20 0	18 0 ..	20 0
West India ..	"	9 0 ..	16 0	11 0 ..	18 0
Vanilla, large	per lb.	50 0 ..	60 0	60 0 ..	72 0
inferior ..	"	21 0 ..	30 0	50 0 ..	59 0
Wormseed	per cwt.	0 0 ..	0 0	0 0 ..	0 0
GINGER, Preserved, per lb.		0 5½ ..	0 10	0 6½ ..	0 7
HONEY, Chili	per cwt.	35 0 ..	54 0	44 0 ..	62 0
Jamaica ..	"	44 0 ..	53 0	48 0 ..	58 6
Australian ..	"	43 0 ..	55 0	40 0 ..	56 0
IPECACUANHA	per lb.	4 0 ..	4 9	4 0 ..	4 8
ISINGLASS, Brazil ..	"	2 2 ..	4 9	2 10 ..	5 7
Tongue sort ..	"	2 7 ..	5 4	3 0 ..	5 8
East India ..	"	1 3 ..	5 0	1 0 ..	5 6
West India ..	"	4 1 ..	4 6	5 0 ..	5 6
Russ. long staple	"	12 0 ..	15 0	8 6 ..	13 0
inferior ..	"	0 0 ..	0 0	4 0 ..	8 0
Simovia ..	"	3 0 ..	4 0	3 3 ..	5 0
JALAP, good	"	0 9 ..	0 9	0 9 ..	0 10
infer. & stems ..	"	0 6 ..	0 7½	0 8 ..	0 9
LEMON JUICE	per degree	0 1 ..	0 2	0 2½ ..	0 0
LIME JUICE	per gall.	1 6 ..	2 0	1 6 ..	2 0
Liquorice, Spanish per cwt.		0 0 ..	0 0	40 0 ..	70 0
Liquorice Root ..	"	15 0 ..	30 0	11 0 ..	16 0
MANNA, flaky	per lb.	5 6 ..	6 0	2 6 ..	3 0
small	"	1 6 ..	1 9	1 2 ..	1 5
MUSK, Pod	per oz.	15 0 ..	50 0	20 0 ..	45 0
Grain	"	37 0 ..	62 0	46 0 ..	60 0
OILS (see also separate list)					
Almond, expressed per lb.		1 2 ..	0 0	1 0 ..	0 0
Castor, 1st palc.	"	0 3½ ..	0 4	0 4½ ..	0 4½
second	"	0 3½ ..	0 3½	0 4 ..	0 4½
infer. & dark ..	"	0 3 ..	0 0	0 4 ..	0 4½
Cod Liver	per gall.	3 4 ..	7 3	5 0 ..	7 0
Croton	per oz.	0 2½ ..	0 0	0 3 ..	0 4
Essential Oils:					
Almond	per lb.	24 0 ..	25 0	22 0 ..	0 0
Anise-seed	"	7 0 ..	0 0	8 9 ..	9 0
Bay	per cwt.	0 0 ..	0 0	65 0 ..	70 0
Bergamot	per lb.	10 0 ..	15 0	10 0 ..	25 0
Cajeput	per bottle	2 9 ..	3 0	2 4 ..	2 8
Caraway	per lb.	9 0 ..	9 3	5 3 ..	6 0
Cassia	"	3 10 ..	4 0	4 8 ..	0 0
Cinnamon	per oz.	2 6 ..	6 6	1 0 ..	7 0
Cinnamon-leaf ..	"	0 2 ..	0 3½	0 1 ..	0 3
Citronelle	"	0 1½ ..	0 2	0 1½ ..	0 2
Clove	per lb.	9 3 ..	9 4	11 0 ..	0 0
Juniper	"	1 10 ..	0 0	1 3 ..	2 0
Lavender	per lb.	1 8 ..	7 0	1 10 ..	5 0
Lemon	"	7 0 ..	9 6	7 0 ..	11 6

	1876.		1875.	
Essential Oils, continued:—	s. d.	s. d.	s. d.	s. d.
Lemongrass per oz.	0 2½	0 0	0 3½	0 4
Neroli "	3 0	6 6	0 4	3 0
Nutmeg "	0 7	0 0	0 7	0 8
Orange per lb.	6 0	9 0	8 0	10 0
Otto of Roses per oz.	13 0	25 0	15 0	22 0
Patchouli "	2 0	3 6	2 9	4 0
Peppermint:				
American per lb.	17 0	17 9	23 0	24 0
English "	34 0	35 0	29 6	32 0
Rosemary "	2 0	2 6	1 4	1 10
Sassafras "	0 0	0 0	2 0	3 0
Spearmint "	14 0	16 0	6 0	18 0
Thyme "	0 0	0 0	1 9	2 0
Mace, expressed per oz.	0 6	0 10	0 3	0 3½
Opium, Turkey per lb.	19 6	21 6	36 0	38 0
inferior "	14 0	18 0	20 0	35 0
QUASSIA (bitter wood) per ton	100 0	200 0	0 0	0 0
RHUBARB, China, good and fine per lb.	3 0	4 8	1 11	5 9
Good, mid. to ord. "	0 9	2 10	0 3	1 6
Dutch trimmed "	0 0	0 0	0 0	0 0
Russian "	0 0	0 0	0 0	0 0
ROOTS—Calumba per cwt.	28 0	31 0	17 0	20 0
China "	19 0	24 0	18 0	20 0
Galangal "	19 0	22 0	20 0	25 0
Gentian "	23 0	24 0	17 0	19 0
Hellebore "	0 0	0 0	30 0	33 0
Orris "	26 0	75 0	30 0	70 0
Pellitory "	0 0	0 0	38 0	39 0
Pink per lb.	0 0	0 0	0 10	1 3
Rhatany "	0 4	1 0	0 4	2 0
Seneca "	3 9	4 3	3 7	4 0
Snake "	0 7	0 8	1 0	1 9
SAFFRON, Spanish "	31 0	26 0	18 0	23 0
SALEP per cwt.	0 0	0 0	170 0	200 0
SARSAPARILLA, Lima per lb.	0 0	0 0	0 6	0 9
Para "	0 0	0 0	1 0	1 3
Honduras "	1 2½	1 10	1 6	2 0
Jamaica "	2 0	3 0	1 9	2 6
SASSAFRAS per cwt.	0 0	0 0	13 0	14 0
SCAMMONY, Virgin per lb.	30 0	45 0	25 0	36 0
second & ordinary "	8 0	24 0	7 0	24 0
SENNA, Bombay "	0 1	0 4	0 1	0 5
Tinnivelly "	0 2	1 3	0 1	0 8
Alexandria "	0 4	2 6	0 3½	1 5
SPERMACETI, refined "	1 6	0 0	1 2	1 3
American "	1 2	0 0	1 0	1 1
SQUILLS "	0 3	0 4	0 1½	0 3
GUMS.	£ s.	£ s.	£ s.	£ s.
AMMONIAC drop per cwt.	2 7	2 12	4 15	5 0
lump "	1 10	1 18	3 0	4 0
ANIMI, fine washed "	10 0	10 10	12 0	13 10
bold scraped "	8 15	9 15	10 10	11 15
sorts "	6 0	8 5	6 10	10 15
dark "	3 5	6 10	4 10	5 10
ARABIC, E.I., fine				
pale picked "	3 5	3 15	2 18	3 10
sorts, mid. to fin. "	1 8	3 2½	1 16	2 16
garblings "	1 2	2 3	0 19	1 10
TURKEY, pick. gd. to fin. "	6 0	9 0	7 0	11 0
second & inf. "	2 10	5 10	3 0	6 15
in sorts "	1 10	2 0	1 10	2 15
Gedda "	1 2	1 6	1 0	1 8
BARBARY, white "	0 0	0 0	0 0	0 0
brown "	1 9	1 16	1 6	1 12
AUSTRALIAN "	1 17	2 6	1 4	2 8
ASSAFETIDA, cm. to fin. "	0 18	1 18	0 9	2 4
BENJAMIN, 1st & 2nd "	8 0	29 0	20 0	39 0
Sumatra 1st & 2nd "	7 10	12 0	7 10	12 0
3rd "	3 10	5 0	2 7½	4 5
COPAL, Angola red "	6 0	6 15	5 10	5 15
Benguella "	4 0	5 0	3 10	4 10
Sierra Leone, per lb. "	0 7½	0 11	0 4½	0 10½
Manilla per cwt.	15 0	27 0	35 0	40 0
DAMMAR, pale "	57 0	60 0	0 0	0 0
Singapore "	57 0	60 0	55 0	54 0
EUPHORBUM "	12 0	20 0	11 0	15 0
GALBANUM per lb.	1 0	1 6	1 6	2 0
GAMBOGE, pkcd. pipe per cwt.	180 0	235 0	180 0	280 0
GUAIACUM per lb.	0 6	2 0	0 8	2 6
KINO per cwt.	50 0	80 0	60 0	90 0
KOWHIE, rough "	33 0	50 0	30 0	50 0
scraped sorts "	50 0	68 0	51 0	67 0
MASTIC, picked per lb.	4 0	5 8	4 6	6 0
MYRRH, gd. & fine per cwt.	172 6	200 0	119 0	280 0
ord. to fair "	61 0	172 0	80 0	115 0
OLIBANUM, p. drop "	58 0	60 0	60 0	68 0
amber & ylw. "	45 0	55 0	53 0	60 0
garblings "	22 0	30 0	20 0	39 0
SENEGAL "	2 10	2 15	2 0	2 15
SANDARAC "	85 0	107 6	90 0	100 0
SHELLAC, Orange "	117 6	190 0	230 0	282 6
Liver "	107 6	130 0	205 0	250 0
THUS "	20 0	22 0	21 0	23 0
TRAGACANTH, leaf "	280 0	390 0	220 0	390 0
in sorts "	25 0	175 0	30 0	190 0
OILS.	£ s.	£ s.	£ s.	£ s.
SEAL, pale per tun	34 10	0 0	35 0	0 0
yellow to tinged "	31 0	34 0	32 0	34 0
brown "	29 0	30 0	29 0	30 0
SPERM "	96 0	97 0	106 0	107 0
COD "	44 0	44 10	40 10	41 0

	1876.		1875.	
Oils, continued:—	£ s.	£ s.	£ s.	£ s.
WHALE, South Sea, pale, per tun	35 0	0 0	35 0	0 0
yellow "	32 0	34 10	28 10	35 0
brown "	28 0	30 0	26 0	28 0
East India, Fish "	24 0	0 0	23 0	0 0
OLIVE, Galipoli per ton	0 0	0 0	0 0	0 0
Trieste "	47 0	0 0	42 10	43 0
Levant "	0 0	0 0	41 0	0 0
Mogador "	0 0	0 0	40 5	0 0
Spanish "	0 0	0 0	0 0	0 0
Sicily "	0 0	0 0	42 10	0 0
COCOANUT, Cochin "	40 10	0 0	43 10	44 0
Ceylon "	38 10	39 0	37 15	38 0
Sydney "	32 0	38 10	37 0	37 10
GROUND NUT AND GINGELLY:				
Bombay "	0 0	0 0	0 0	0 0
Madras "	34 0	0 0	35 0	0 0
PALM, fine "	38 0	0 0	35 10	0 0
LINSEED "	23 10	23 15	25 0	25 10
RAPESEED, English, pale "	38 10	0 0	32 0	0 0
brown "	36 10	0 0	30 0	0 0
Foreign, pale "	39 0	0 0	33 0	34 0
brown "	0 0	0 0	0 0	0 0
COTTONSEED "	26 10	27 0	25 10	0 0
LARD "	65 0	66 0	74 0	0 0
TALLOW "	30 0	54 0	22 0	28 0
TURPENTINE, American, cks. "	24 6	24 9	25 9	26 0
French "	0 0	0 0	0 0	0 0
PETROLEUM, Crude "	0 0	0 0	0 0	0 0
refined, per gall. "	0 10½	0 10½	0 9½	0 10½
Spirit "	0 9	0 0	0 8	0 8½
SEEDS.				
CANARY per qr.	175 0	185 0	205 0	210 0
CARAWAY, English per cwt.	44 0	45 0	0 0	0 0
German, &c. "	0 0	0 0	18 0	20 0
CORIANDER "	12 0	18 0	8 0	18 0
HEMP per qr.	36 0	38 0	0 0	0 0
LINSEED, English per qr. "	60 0	65 0	59 0	66 0
Black Sea & Azof "	0 0	0 0	53 0	54 0
Calcutta "	50 0	0 0	56 6	0 0
Bombay "	51 0	0 0	60 0	61 0
St. Petersburg "	0 0	0 0	54 0	56 0
Mustard, brown per bshl.	0 0	0 0	0 0	0 0
white "	10 0	13 0	10 0	12 0
POPPY, East India, per qr.	53 0	53 6	54 0	0 0
SPICES.				
CASSIA LIGNEA per cwt.	52 0	70 0	56 0	75 0
Vera "	22 0	44 0	24 0	50 0
Buds "	92 6	97 6	115 0	122 6
CINNAMON, Ceylon:				
1st quality per lb.	2 8	3 9	2 9	4 3
2nd do. "	2 0	2 11	2 0	3 3
3rd do. "	1 11	2 6	1 8	2 10
Telliecherry "	0 0	0 0	3 3	3 5
CLOVES, Penang "	1 10	2 0	2 2	0 0
Amboyna "	1 5	1 6	1 8	1 9
Zanzibar "	1 2	1 4	1 0	1 6
GINGER, Jam. per cwt.	100 0	202 6	110 0	200 0
Ord. to good "	60 0	95 0	79 0	100 0
African "	40 0	0 0	58 0	0 0
Bengal "	38 0	0 0	50 0	60 0
Malabar "	0 0	0 0	50 0	0 0
Cochin "	62 0	120 0	76 0	125 0
PEPPER, Blk. Malabar, per lb.	0 4½	0 5	0 6½	0 7½
Singapore "	0 4½	0 0	0 5½	0 0
White Telliecherry "	0 10	1 4	0 11	1 6
Cayenne "	3 0	3 4	1 6	3 1
MACE, 1st quality "	2 2	3 1	2 11	3 6
2nd and inferior "	1 0	2 1	1 8	2 10
NUTMEGS, 78 to 60 tol. b.	3 4½	4 3	3 8	4 4
90 to 80 "	2 11	3 4	3 3	3 6
182 to 95 "	2 6	2 11	2 7	3 2
PIMENTA "	0 3	0 3½	0 3	0 3½
VARIOUS PRODUCTS.				
COCHINEAL—				
Honduras, black per lb.	1 10	2 6	1 11	2 10
silver "	1 7	1 10	2 0	2 4
pasty "	1 6	0 0	1 9	1 11
Mexican, black "	1 8	1 11	1 10	2 0
silver "	1 7	1 8	1 8	1 0
Teneriffe, black "	1 9	3 2	2 0	3 8
silver "	1 8	1 10	1 11	2 2
SOAP, Castile per cwt.	26 0	33 0	33 0	34 0
SPONGE, Turk. fin. pkd pr lb.	12 0	16 0	12 0	16 0
Fair to good "	4 0	11 0	4 0	11 0
Ordinary "	1 0	3 6	1 0	3 6
Bahama "	0 6	3 0	0 6	3 6
TERRA JAPONICA—				
Gambier per cwt.	25 6	0 0	26 6	0 0
Free cubes "	35 6	37 6	40 0	41 0
Cutch "	25 6	26 0	28 0	29 0
WOOD, DYE, Bar per ton	£3 5	£3 10	£4 15	5 0
Brazil "	0 0	0 0	9 0	27 0
Cam "	19 0	24 0	25 0	34 0
Fustic, Cuba "	8 10	9 0	9 0	9 10
Jamaica "	6 10	7 0	8 10	9 0
Logwood, Campeachy, "	9 0	10 0	9 0	10 0
Honduras "	7 0	7 15	7 0	7 10
St. Domingo "	6 0	7 0	6 0	6 15
Jamaica "	6 10	7 0	6 0	6 15
LIMA, first pile "	9 10	11 0	13 0	14 0
RED SANDERS "	6 15	0 0	6 10	0 0



CORRESPONDENTS will please observe that the Editor cannot undertake to send private replies to the class of queries which are answered in this page. He will be much obliged if readers will communicate items for this department as well as draw from it. All communications should give (in confidence) the name and address of the writer, though any *nom de plume* may be adopted. No query can be attended to in the current month which reaches this office after the 10th.

M. S.—Your question is very indefinite. If the mixture of paraffin with water is required for internal use, an emulsion prepared with powdered gum or yolk of egg would probably answer. If for external application, we know of no means of mixing or suspending paraffin in water in such a way that the paraffin would come into actual contact with the surface until the whole of the water had evaporated. If for a use which may be termed artistic, it would be necessary to have some idea what the purpose is before a useful formula could be devised. Finally, we do not think it possible to mix paraffin with water so that the mixture shall be homogeneous.

Erasmus Wilson's Hair Wash.—In reply to *Dens* we have received the following:—

From *Tineus*: R. Eau de Cologne, 3 oz.
Tincturæ Cantharides, 3ij.
Tinctur. Mosch., 3j.
Ol. Rosmarini, ℥viii.
Ol. Lavand. Ang., ℥xv.

Mix.

And from Mr. J. R. Gardner, of Plymouth, the following, taken from Erasmus Wilson's book "On Skin Diseases," 5th edition:—

Lotio Capillaria Stimulans.

R. Olei Amygdalæ Dulcis, 3i.
Liquoris Ammonie Fortiss, 3i.
Spiritus Rosmarini, 3iv.
Aque Mellis, 3ii.

Misce fiat Lotio.

Another of his lotions is called:

Lotio Capillaria Refrigerans.

R. Olei Amygdalæ Dulcis, 3ss.
Sodæ Biboratis, 3i.
Aque Florum Aurantii, 3iss.
Aque Destillatæ, 3vi.

Mix.

T. R. supplies the following:

R. Oil of Sweet Almonds, 3ii.
Strong Solution of Ammonia, 3ss.
Ext. Rosemary, 3i.
Rose Water, 3iv.
Hungary Water, 3ii.

Mix.

Lest *Dens* should be embarrassed with this plethora of recipes, we may mention that the second, we are informed by a good authority, is the formula followed by most houses.

Polish for Patent Leather Goods.—Take half a pound of molasses or sugar, one ounce of gum Arabic, and two pounds of ivory black; boil them well together, then let the vessel stand until quite cooled, and the contents are settled; after which bottle off. This is an excellent reviver, and may be used as a blacking in the ordinary way, no brushes for polishing being required.

We are asked to "kindly inform" *M. J. P.* "what are the hours a master can demand from an apprentice, and if you think 14½ hours a day too long, only going out at the most twice a week (and then on business), and perhaps some weeks not at all, taking duty on Sunday from 9 A.M. till 4 P.M. on one Sunday, and from 4 P.M. till 10 P.M. on the next." We are not generally disposed to sympathise with youthful grumblers, but if the foregoing statement is accurate, *M. J. P.* has assuredly made out a case for a little mild remonstrance, to say the least. The life of an apprentice was not harder than this in the good old times when the late Henry Deane was attitled to the trade, and it is not desirable to encourage the return of such feudal customs.

R. Z.—Spirit photographs are produced by first sketching on the background the lineaments of the necessary ghost, using for the purpose a solution of sulphate of quinine, or other fluorescent substance, and then placing the sitter in the requisite propinquity with the screen on which the spirit has been invisibly drawn. The photograph will present the apparition.

T. A. S.—Your label would unquestionably render the preparation liable to medicine stamp duty.

Papillus Chemica.—To become a Fellow of the Chemical Society you must get one "Fellow" to nominate you, and two others to support your nomination. The address of the "secretray," as you call him, is Burlington House, London, W. Correct spelling is not, we believe an essential qualification for fellowship, but it is a desirable addition to scientific acquirements.

L. S.—*Lavender Water.*—A distilled product of considerable fame is prepared thus:—

Oil of English Lavender, 4 ozs.
Alcohol, 5 pints.
Rose Water, 1 pint.

Mix and distil, 5 pints.

An excellent lavender water obtained by simple mixture is produced from the subjoined formula:—

Oils of Lavender and Bergamot, of each, 3 drms.
Otto of Rose and Oil of Cloves, of each, 6 drops.
Oil of Rosemary and Essence of Musk, of each, ½ drm.
Benzoic Acid, ½ drm.
Honey, 1 oz.
Alcohol, 1 pint.
Esprit de Roses, 2 ozs.
Mix well and keep till old.

W. T.—Bushby's Pill Machine was invented by Mr. Bushby, of Stockport Road, Manchester, and the patent was afterwards sold, we believe, to Messrs. John Bailey & Co., of Albion Works, Salford. Either firm will no doubt be able to give you information.

Another who has Left the Trade.—Your letter would occupy nearly a page of our space, and we really think it too late in the century to question the desirability of testing the qualifications of would-be chemists. If, however, you will briefly and definitely give us your grounds for maintaining that "the greater part of the questions put at the examinations do not concern the proper carrying on of the trade in the least" we will try to find space for your remarks. Neither do we think it desirable to open a crusade against the Board of Inland Revenue. The chemist who without a license sold some methylated spirit "to oblige a customer" might have been very kind-hearted, but he could hardly expect the Board to regard his motives.

Turpentine.—(1) The Board of Inland Revenue is not bound to caution you previous to prosecuting you if you infringe their laws, nor is it their custom to do so. (2) If you sell patent medicines, that is, remedies bearing medicine stamps, you must have a license. If you sell medicines which ought to have a stamp, and have not, and at the same time do not possess a license, you render yourself liable to twopenalties. (3) Full particulars of registration of trade marks were printed in our last number. (4, 5, 6, 7) We cannot tell whether your cough balsam and teething powders are liable to medicine stamp duty, unless we see the labels. You can judge for yourself if you will study carefully the particulars given in our Diary for 1876. For an authoritative reply, send the labels to the Board of Inland Revenue, Somerset House, London, and ask the question. Special permission has been given to retail teething powders singly, provided that each shilling's worth bears a 1½d. stamp; but if the "cough balsam" is liable, you would have to attach a 1½d. stamp to every six penny worth, three penny worth, or even one penny worth you might sell.

Puzzled asks: "How would you compound the following:—

R. Argent. Nit., 3i.
Æther. Sulph., 3i.

Dissolve. To be applied as directed."

Either *Puzzled* is up to larks, or our opinion of prescribers' chemistry requires further modification. If it is desired to have an application of caustic to be pencilled over the parts which shall dry rapidly we do not believe it can be attained by any other means than by the use of water. If the object be simply to avoid the use of water, the ethereal solution might be made by using 3i. of glycerine.

C. T. H.—Liquid cochineal is the best colouring to use for imparting a pink tint to aerated waters. Or burnt sugar will darken them. Tincture of saffron will impart a yellow tint.

Pil. Ricini.—Any non-mercurial aperient pill will do for "Castor Oil Pills." Say—Ext. Coloc. Co. 60 gr.; Pil. Rhei Co., 30 gr.; Saponis, 10 gr. Make 24 pills. Some chemists add a little croton oil, apparently with the idea that they thereby save their consciences.

Alpha.—*Liquid Glue.*—How are we to know that the recipe we are about to give you may not be exactly the same as the one you have, but which "has not turned out satisfactorily." You should have told us what that formula was. The ordinary liquid glues sold in small bottles are made of shellac, but for a large quantity, cheap, such as you require, dissolve 2 lbs. of glue in 1 quart of water by the aid of gentle heat; when dissolved and cool add gradually 7 ozs. of strong nitric acid. Keep it in a stoppered bottle.

L. M.—It would depend on the proportions of lime and carbolic acid used. If not in excess the value as manure would be increased, particularly by the former.

Synonymous.—Barelay and Butler both make "Leeming's Essenee;" but whether it is public property we cannot tell. Perhaps you had better ask one of those houses. In the other case you mention there has been no lawsuit to settle the dispute, but the right of manufacture is certainly limited to the two gentlemen who were until recently partners in the concern.

To Restore Scorched Linen.—Take two onions, peel and skin them, and extract the juice by squeezing or pounding. Then cut up half an ounce of white soap, and two ounces of fuller's earth; mix with them the onion juice, and half a pint of vinegar. Boil the composition well, and spread when cool over the scorched part of the linen, leaving it to dry thereon. Afterwards wash out the linen.

K. A. R.—Strictly speaking the label would render the preparation liable to stamp duty; but many such preparations are passed. Apply to the Board of Inland Revenue, Somerset House. You can register the label at Stationer's Hall for 5s. You can ascertain the cost of registering trade marks by referring to article in our last.

Anxious.—The business may be carried on by "any executor, administrator, or trustee of the estate," as such (Pharmacy Act, s. 16), provided that a qualified manager be engaged. But you may not carry it on in your own name even if you employ twenty qualified men, until you have yourself passed the required examinations. Of course you may be the owner of the premises, but with the exception named above, the proprietor of the business must himself be registered.

A Monochromatic Light.—Into a pint bottle of methylated spirit place two ounces of common salt, and well shake the mixture; then pour a tablespoonful upon some cotton-wool tied round a stick fixed in the nozzle of a candlestick and ignite it. If variously coloured flowers or saws are illuminated by the purely yellow light obtained from the burning spirit they present a most dreary appearance; "coral" lips become of livid hue, rosy cheeks turn ghastly pale, red ribbons seem black; in short, everything appears different to what it does when viewed by the white light with which we are familiar.

Subscriber.—According to present appearances your Odontalgic Tincture is liable to medicine stamp duty. To get an authoritative decision, however, apply to the Board of Inland Revenue, Somerset House, London. We may make this suggestion to the numerous correspondents who submit their labels to us. Carbolic acid will dissolve in about fifteen times its bulk of water, or in a less proportion if first mixed with glycerine in the proportion of 1 part to 4 of glycerine.

Croci in Fæno.—If you are a "patentee" of a medicine, as you say, of course you are protected against piracy. If you mean, however, only that you make a "patent medicine," you will be protected in the title by registering the same according to the new law. Instructions you will find in our last number. The medicine stamp law is explained in our Diary for 1876.

Iota.—Not knowing the composition of the fixing cement we cannot advise you how to remove glass letters from plate glass without injury to either. Even if we did our recommendation would be that you should employ the services of some one whose business it is to deal with such things. The man who fixed the letters would be the most likely person to apply to with success.

Minor.—We are obliged for the cutting, which, however, we must hold over for the present.

W. H.—Presuming you do not wish to go to the extent of one ton stone runners, we know of no "apparatus for grinding and levigating drugs and other articles" that answer the purpose better in a small way than the two you mention. Goodall's is perhaps more generally useful, but Bailey's is excellent for brittle articles, such as crystals, the hard gums, &c.

J. Archer.—No books are officially recommended for the Preliminary examination. "Cæsar" is, of course, indispensable, and you would probably derive assistance from Bohn's or Giles's translation of it, though a good teacher would be better than either. Use Cooley's "Pharmaceutical Latin Grammar" or the "Eton Latin Grammar" in conjunction with "Cæsar." Of English Grammars, Mason's is one of the best. For arithmetic you cannot do better than study "Colenso" as far as that treats of the subjects of examination.

Artificial Honey.—The *American Agriculturist* recommends the following as an excellent substitute for the genuine article: "Put 10 lbs. of white sugar in two quarts of water, and gradually heat it, stirring it occasionally until brought to the boiling point; then remove from the fire and add 1 lb of real honey. When half cooled add $\frac{1}{2}$ lb. more of honey, and when only blood warm add another $\frac{1}{2}$ lb. of honey; when nearly cold add ten drops of essence of peppermint. This makes 16 lbs. in all of a very good sweetening. Its flavour can be varied to the liking by adding more or less peppermint essence."

Glycerine.—The extent to which phosphorus is soluble in glycerine has not been accurately determined, but experiments by J. Williams ("Year-Book of Pharmacy, 1874," p. 588), seem to indicate that one grain of phosphorus will readily dissolve in fourteen fluid drachms of hot glycerine, without subsequent deposition.

Carlotta.—*Mange in Cats.*—"Is there more than one variety or only different stages of same disease? What is the treatment?" There is mange due to parasites, which may be treated with sulphur ointment, or by washing with the "Glycerin" Dip. There is also an eruption of pimples due to constitutional disturbance, which is best treated with one drop doses of Fowler's solution of arsenic given twice a day in milk.

W. L. B.—Perhaps you refer to Mayne's "Medical Vocabulary," published by Churchill, price 8s. 6d. This, however, is not a recent work. We do not remember one of a similar character published within the last two or three years. There is another medical vocabulary, published by Renshaw, by Robert Fowler, M.D., the price of which we do not know.

To Season New Glassware.—Put graduates, soda tumblers and other glass articles into a kettle; cover them entirely with cold water, and put the kettle where it will soon boil. When it has boiled a few minutes, set it aside covered close. When the water is cold take out the glass. Treat new earthenware in the same way.

T. W. E. W.—The most thorough and newest work on the practice of medicine is Ziemssen's "Cyclopædia of Practical Medicine," now being published by Low & Co., at 21s. per volume, to be completed in fifteen volumes. It is translated from the German. We may also mention Copland's "Dictionary of Practical Medicine" (Longmans), 36s.; Aitken's "Outlines of the Science and Practice of Medicine" (C. Griffin & Co.), 12s. 6d.; and Tanner's "Index of Diseases and their Treatment" (Renshaw).

R. G. G.—Blaine's "Outlines of the Veterinary Art," edited by Charles Steel (Churchill), 18s.; and the "Veterinarian's Pocket Remembrancer" (Churchill), 3s. Also Principal Williams' "Veterinary Surgery," and (by the same author) "Veterinary Medicine" (Edinburgh: MacLachlan & Stewart); "Tooth Extraction," by John Gorham, M.R.C.S. (Hardwicke), 1s.

Removal of Nitrate of Silver Stains from Woven Tissues.—Chloride of copper completely removes, even from coloured woven tissues, stains occasioned by nitrate of silver; the tissue is to be afterwards washed with a solution of hyposulphite of soda, and next thoroughly washed with water. From white cotton and linen tissues, nitrate of silver stains are more readily and effectively removed by applying dilute solutions of permanganate of potassa and hydrochloric acid, followed by washing with hyposulphite of soda solution, and rinsing in plenty of fresh water. By these means the use of cyanide of potassium is rendered unnecessary.

Port Elizabeth.—Mr. Hunting has never published a work on the veterinary art. His articles in THE CHEMIST AND DRUGGIST of 1869 and 1870 were deservedly popular, and you will be glad to hear that we have arranged with him for a new series of veterinary notes. See also reply to R. G. G.

Nemo.—We think your wrapper would render the pills liable to stamp duty, but for authoritative information apply to the Board of Inland Revenue. Of course the name of the maker in the title constitutes them a "proprietary" medicine, but it does not necessarily follow that they are liable to duty.

To Preserve Silver Bright.—For the preservation of the lustre of articles of silver or plated ware, when not needed for actual use for a considerable time, a coating of collodion may be employed to great advantage. The articles are to be heated, and the collodion then carefully applied by means of a brush, so as to cover the surface thoroughly and uniformly. It is used most conveniently when diluted with alcohol, as for photographic purposes.

Pulvis.—The following formula for "composition powder" is given in Dr. Coffin's "Guide to Health":—Bayberry, 4 ozs.; Canadian pine and ginger, of each, 2 ozs.; cayenne and cloves, of each, $\frac{1}{2}$ oz. You will find other formulæ in our "Notes and Queries," November, 1873.

Alpha.—We know of no law to compel a chemist and druggist to dispense a prescription if he does not please to do it. Such a case as this arose two or three years ago at Ramsgate, and was reported and commented on in our issues of August and September, 1873. Apothecaries, however, can be fined 5*l.* if they "knowingly, wilfully and contumaciously refuse" to dispense a physician's prescription or supply any medicines required, unless they can show some satisfactory excuse (55 Geo. III., ch. 194).

Registration of Deaths.—A correspondent of the *Lancet* thus expounds the law. He says this is the opinion of a solicitor who is also a coroner:—"Any one may practise as a medical man, but may not take or use any of the titles or descriptions contained in the 40th clause of the Medical Act of 1858. So far as the carrying out of the Registration Act is concerned, a medical certificate of the cause of death is not necessary in any case. The Registration Act contains a clause relating to unqualified practitioners, and the registrar cannot refuse to register a death simply because none but an unqualified man has been in attendance."

Imitation Marble for Plaster Casts.—Paint them over once or twice with this mixture: take stearine, 2 lbs., white Castile soap, 2 lbs., pearl ash, 1 lb. Dissolve in q.s. boiling water, then let stand for three days.